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The purpose of this exploratory study is to establish a set of design guidelines, based on a review of literature, for developing elementary school websites that are more effective in delivering useful information to parents and facilitating two-way, home-school communication as a means of enhancing parental involvement, and then to apply those guidelines to a select sample of schools that enroll children in kindergarten through fifth grade to see how they compare. Thus, I started the study with two questions. First, what structure, content, and tools make a school website more effective in delivering useful information to parents and facilitating two-way home-school communication? Second, how does a select sample of school websites compare? These were the major concerns of the study. Overall, the schools in this study sample need to improve their methods for delivering useful content and interactive communication tools to better facilitate home-school communication.

Headings:

 Websites/Evaluation

 Computer mediated communication

 Computer uses in education

 Home School Relationship

 Parent Involvement

 Family School Relationship

SCHOOL WEBSITES BENEFITING HOME-SCHOOL COMMUNICATION:
AN EXPLORATORY STUDY

by
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TABLE OF CONTENTS

TABLES

INTRODUCTION

A constructive home-school relationship is an important element of a child's educational success. Effective home-school communication has positive effects on a child's attitude toward school (Epstein, 1986). Also, elementary level children are not always able to successfully communicate to parents what issues are occurring in the classroom. Two-way communication between families and schools is essential both for schools (they gain better understanding of the child's needs and solicit parental assistance) and for parents (being more informed about their child's progress at school promotes levels of parental involvement that are even more beneficial for children's education development) (Lunts, 2003). Parents and teachers need to be equal partners in this relationship, especially during the early childhood years, in order to help the child establish the proper academic foundation. Research studies show that when parents are involved in their child's education, students have (Freedman, 1994):

- Higher grades, test scores, and graduation rates
- Improved school attendance
- Increased motivation and better self-esteem
- Lower rates of suspension
- Decreased drug and alcohol use
- Fewer instances of violent behavior
- Increased likelihood of going on to college and other secondary education

Many families encounter obstacles to participating in their children's education. Obstacles to parental involvement include (CPPP, 1999):

• Differing ideas among parents and teachers on what constitutes involvement
• Less than welcoming atmosphere toward visitors in schools and classrooms
• Negative or neutral communication from schools
• Insufficient training for teachers on how to reach out to both mothers and fathers
• Lack of parental education and parenting skills
• Time pressures
• Job pressures
• Language barriers

Also, studies reveal that parents tend to be less involved in the educational process as their children get older. A study of the U.S. Department of Education found that nationally, as children grow older, interactions between families and schools decline both in number and in the positive nature of such interactions (CPPP, 1999). This further indicates the importance of parental involvement during the child's elementary school years.

There are many channels of communication that parents and educators currently use to communicate effectively. Three such methods in particular are face-to-face communication, written correspondence sent through the child, and telephone or voicemail. Parents can talk to teachers face-to-face during scheduled parent-teacher conferences and as they drop off their child before school or when they pick them up after school in some cases. Also, teachers and parents both find it convenient to send written correspondence to each other through the child via homework folders and assignments. Telephone and voicemail have been used for years, especially when a more immediate response was desired. Factors such as changing family dynamics, parent work

schedules, and lack of teacher access during school hours have lessened the effectiveness of some of these methods and call for further supplementing the current methods of home-school communication.

Bauch (1989) emphasizes that communication technologies expand opportunities for parents to communicate with schools and gives them the opportunity to be better informed about their children's education, especially when traditional means of communication between school and home are not as convenient. It can also increase the motivation for parents to become more engaged in their children's learning and diminish the need to always have face-to-face interaction. As computer and telecommunications technology becomes more affordable each year, the percentage of schools using computer and telecommunication technologies will steadily increase. Thus, schools are not only able to utilize new technology, but are able to decide what type of technology best suits their needs.

The Internet has developed into a tool for researching, storing and disseminating information, and for online learning and creativity (U.S. Department of Education, 2000a, b). The internet is a medium for home-school communication. Schools understand that if appropriately used, the internet can benefit parents, teachers, and students in a number of ways. For example, in schools that have internet access, teachers and students are using the internet for searching and retrieving information they need and communicating information to one another. By accessing school websites, parents can communicate with the school or classroom teacher. An enormous amount of pertinent information, such as

scheduled homework assignments, grades, progress reports, current curriculum, newsletters, permission slips, and important scheduled events can be accessed through a school web page. Teacher/class web pages on the school's website will help supplement other forms of communication such as face-to-face and telephone communication to permit parents to follow the learning in the classroom, without having to take time off work to visit the class. Email, video conferencing, and social computing tools like instant messaging, weblogs, and online message boards will also enable parents and teachers to communicate with each other at more convenient times.

Even though many schools now have websites, not all of them are beneficial to parent-teacher communication. Previous research suggests that the structure and content of a school website should be carefully considered and planned, adhering to user-centered design principles, in order to reach its primary audience. If a school desires to increase parental involvement in their children's education, the school should consider parents as the main audience for at least some components of that school website (Sanchez, 1998).

The purpose of this exploratory study is to establish a set of design guidelines, based on a review of literature, for developing elementary school websites that are more effective in delivering useful information to parents and facilitating two-way home-school communication a means of enhancing parental involvement, and then to apply those guidelines to a select sample of elementary school websites to see how they compare. Thus, I started this study with two questions. First, what structure, content, and tools make a school website more effective in delivering useful information to parents

and facilitating two-way home-school communication? This will allow for building a set of evaluation criteria. Second, how does a select sample of websites of schools that enroll children in kindergarten through fifth grade compare? These were the major concerns of the study. I set out to explore the literature concerning parent-teacher/school-home communication, potential best practices or guidelines for website design, emerging trends in information communications technology (ICT), and usability studies involving school and teacher class web pages in order to use this literature to inform my criteria for evaluating the websites in the sample. The data analysis will include descriptions of elementary school websites and their strengths and weaknesses in providing accessible, useful content and interactive communication tools to parents and teachers.

The outcome of this study can add to the knowledge of home-school communication by establishing a framework of design guidelines that elementary schools can use to ensure that their websites facilitate the delivery of useful information to parents and support effective two-way communication between home and school as a means of enhancing parental involvement. It will also offer examples of good and bad implementations. This study will seek to further broaden the idea of school websites as interactive instead of merely informative.

METHODOLOGY

This study applies a multi-method approach to generate a clear image of what schools are currently doing and what still remains to be done to make their websites more effective in delivering useful information to parents and facilitating two-way home-

school communication. It employs a review of previous research and analysis of content of actual school websites. Content analysis, one of three unobtrusive research methods, is the study of recorded human communications, such as books, websites, paintings, and laws (Babbie, 2007). It is a systematic analysis of the occurrence of words, phrases, concepts, etc. in those various forms of human communications (Powell, 1997). This research method requires conceptualizing and creating a category system (coding), making sampling decisions, applying the category system to a unit of analysis, and using quantitative and qualitative techniques to interpret the content analysis data. Briefly, the study is organized in the following steps:

1. Conceptualize and create a category system

- Review published literature

- Perform *a priori* coding and identify design guidelines and information communication technologies that researchers have agreed make a school website more effective in delivering useful information to parents and facilitating two-way home-school communication

- Revise categories as necessary to maximize mutual exclusivity and exhaustiveness

2. Make sampling decisions

3. Apply category system to all school websites in the sample

4. Interpret content analysis data using qualitative techniques

The initial step was to conceptualize and create a category system (coding). When using *a priori* coding, the categories are established prior to the content analysis based upon some theory (Stemler, 2001). Subject matter experts agree on the categories, and the coding is applied to the data. Revisions are made as necessary, and the categories are

revised to the point that maximizes mutual exclusivity and exhaustiveness (Weber, 1990). In this case, published literature concerning parent-teacher/school-home communication, potential best practices or guidelines for website design, emerging trends in information communications technology, and usability studies involving school and teacher class web pages was reviewed to establish categories based on design guidelines and information communication technology tools that would make a school website more effective in delivering useful information to parents and facilitating two-way home-school communication. Reviewing literature of experts in the area of home-school communication and information communication technologies was done in order to increase the validity and reliability of the established categories. Categories were revised as needed to ensure exclusive responses.

The next step was to make sampling decisions. The units of analysis and observation were websites of 149 public elementary schools in the Chapel Hill-Carrboro City, Orange County, Durham County, and Wake County school districts and select schools located in the aforementioned counties that are members of the North Carolina Association of Independent Schools (NCAIS) that enroll students in kindergarten through fifth grade. This purposive sample of school districts and schools were chosen because it provided a large, but manageable, sample of large and small, public and private schools which helped to minimize any slant toward a particular enrollment size, tuition cost, or other factors. Also, due to the technical infrastructure that exists in Orange, Durham, and Wake counties in North Carolina, it increased the likelihood that the greater majority of the schools in each school system would have websites to analyze. In an effort to

maintain a level of uniformity, institutions specializing in the education of children with special needs were excluded. Any information that identifies specific schools was masked. Given the exploratory nature of this study, the sample size (N=149) seems adequate to produce quality examples of good and problematic websites that can aid in reinforcing and enhancing the criteria initially provided. The goal is to eventually develop a list of best practices that schools can use as a guide to help ensure that their website is not only informative but beneficial to home-school communication.

Step three involved applying the established category system to every school in the study sample. A data collection form (see Appendix) was designed in Microsoft Word to record the application of each category to the website of each school. Between October 09, 2006 and October 19, 2006, the websites of the schools in the study sample were visited by clicking on the appropriate school name from the district websites of each school system:

- Chapel Hill-Carrboro City Schools
  (http://www.chccs.k12.nc.us/Welcome.asp?DP=Sch)

- Orange County Schools
  (http://www.orange.k12.nc.us/subpages/parent.htm)

- Durham County Schools
  (http://www.dpsnc.net/index.php?option=com_content&task=view&id=2030&Itemid=504)

- Wake County Schools
  (http://www.wcpss.net/school-directory/elementary.html)

- North Carolina Association of Independent Schools (NCAIS)
  http://www.ncais.org/schoolsearch.asp (Raleigh/Durham/Chapel Hill Region)

The content analysis of each website would begin on the school's home page and continue throughout the extent of the website until all categories had been applied. In the event that a school's home page would not load after repeated attempts, the content analysis would be postponed and the next website on the list would be analyzed.

Following the application of the category system to the study sample, the data was analyzed qualitatively and the results discussed. Trends that emerged across the sample are discussed in further detail. Excellent or problematic examples are highlighted without revealing the identity of the school. Unique and innovative implementations of structure, content, or tools that were not specified as an initial category are also noted. The primary risk of using content analysis is errors in reliability, which have been addressed in this study by creating clear categories, and using an adequate sample size.

LITERATURE REVIEW

This research began with the idea of exploring what structure, content, and tools make a school website more effective in delivering useful information to parents and facilitating two-way home-school communication as a means of enhancing parental involvement. Many school websites act more as information brochures but do not offer any other mechanisms for parents to communicate back to the school other than by traditional methods such as face to face interaction, by telephone, or by written correspondence. In lieu of surveying or interviewing a small sample of parents and teachers to discover what content and tools they think would be or are beneficial, I decided to review previous studies which analyzed home-school communication,

performed usability studies of school websites and/or class web pages, discussed

potential best practices or guidelines for website design, and described emerging trends in

information communication technology. This method was chosen in order to broaden the

source and range of input used to inform my criteria. Guidelines for website structure,

content, and tools that were widely noted throughout these studies and literature were

used to form the categories applied in this study. This literature review discusses the

definition of the structural, content, and communication tool categories.

DEFINITION OF STRUCTURAL CATEGORIES

Elementary school websites, like the sites for many other organizations, need to

be designed for the efficient delivery of critical information, not just for visual effects.

The structure of a website plays a major role in how well information is viewed,

comprehended, and disseminated. The following paragraphs discuss design guidelines

pertaining to structuring a website for more effective communication to enable the

establishment of structural categories. Some guidelines pertaining to structure are

applicable to almost any website.

In beginning to establish structural categories, research recommends that use of

graphics should be limited and suggests the use of the most compact formats (USDHHS,

2006). Images and graphics should only be used when they are relevant and enhance the

clarity of the site content. For instance, a photograph of the school on the home page or

images of teachers, staff, and events at the school can help parents to better identify with

the school. JPEG should be the format of choice for photographs or scanned pictures. GIF

should be used when developing custom graphics, such as buttons, icons, or horizontal

rules. Being selective and using the appropriate format will help to minimize page sizes

and aid in faster download times, especially for those without broadband access. Other

methods to improve download times include using several small images rather than a

single large image on a page and using interlacing or progressive images. One study

reported that users rated latencies of up to five seconds as 'good' and delays over ten

seconds were rated as 'poor' (Booch et al., 2000). In a later study by Booch, Kuchinsky,

and Bhatti, users rate pages with long delays as being less interesting and more difficult

to scan. Steps should be taken to ensure that images on the website do not slow page

download times unnecessarily. Certain graphics can make some websites much more

interesting and entertaining for users so they may be willing to wait a few extra seconds

for them to load. However, users tend to lose patience if they wait several seconds for a

graphic to download, and then find that the image is not relevant or useful. Some

decorative graphics are acceptable when they do not distract or annoy the user.

Other researchers have emphasized the need to minimize the use of distracting or

annoying effects such as flying or special effect text, moving objects, or ornamented

fonts (USDHHS, 2006). A large number of school websites, especially teacher class

pages, implement a plethora of animated GIFs, and flashing or scrolling texts. Attention-

attracting features should be used with caution and only when they are highly relevant.

Movement is the most effective attention-getting item. Research suggests that people

cannot stop themselves from initially looking at moving items on a page. However, if the

movement is not relevant or useful, it may annoy the user. If movement continues after attracting attention, it may distract from the content on the website.

Numerous studies declare that for the effective communication of information, content should be easy to read. To ensure this, standard fonts such as serif (Times New Roman or Georgia) or sans serif (Arial or Verdana) should be used (Williams, 2000, Benard et al., 2002). Research demonstrates that using a familiar font helps to achieve the best possible reading speed. In addition, website designers need to avoid using hard to read text colors or hard to read text color/background combinations such as red on black. Many schools also choose to use image or high resolution backgrounds that often make content hard to read. Previous literature supports using black text on a plain, high-contrast, non-patterned background (Williams, 2000). Black text on a plain background elicited a faster reading performance than on a medium-textured background. When compared to reading a lighter shade of text on a dark background, people read black text on a white background up to thirty-two percent faster. In general, the greater the contrast between the text and background, the easier the text is to read.

Multiple publications recommend avoiding, where possible, pages that require large amounts of scrolling (Borges et al., 1998, Spool et al., 1997). For many websites, users deal best with smaller, well-organized pages of information rather than lengthy pages because scrolling can take a lot of time. Older users tend to scroll more slowly than younger users. One study found that Internet users spend about thirteen percent of their time scrolling within pages. Even though each event takes a small amount of time,

cumulative scrolling adds significant time. It is also important to use an appropriate page

layout to eliminate the need for users to scroll horizontally. Scrolling horizontally is a

slow and tedious way to view an entire screen (USDHHS, 2006). Some page layouts may

require users to scroll horizontally if their monitor resolution is smaller than that used by

the site designer.

Another method of improving the delivery of information is using a logical

pattern for the "chunking" or grouping of information. Information should be organized

at each level of the website so that it shows a clear and logical structure to typical users

(USDHHS, 2006). Designers should present information in a structure that reflects user

needs and the site's goals. Information should be well-organized at the website level,

page level, and paragraph level. Good website and page design enables users to

understand the nature of the site's organizational relationships and will support users in

locating information efficiently. A clear, logical structure will reduce the chances of users

becoming bored or frustrated. All information related to one topic should be grouped

together. Grouping all related information and functions together decreases the time spent

searching by decreasing the need for users to search the site for related information.

Users will consider items that are placed close together to be related conceptually.

Along with grouping information logically, published literature shows that critical

information should be displayed prominently and clearly. The page layout should help

users find the most important information. Placing the most important content at the top

center of the web page facilitates the users' finding the information. Users generally look

at the top center of a page first, and then left, then right, and then move systematically down the page (Bryne et al., 1999, Faraday, 2000). All critical content and navigation options should be toward the top of the page. Particularly on navigation pages, most major choices should be visible with a minimum amount of scrolling. Designers should establishing a high to low level of importance for information and maintain this approach throughout each page on the website (Deitweiler et al., 1996, Hornof et al., 2003). Important information should appear higher on the page so users can locate it quickly. The least used information should appear toward the bottom of the page. Information should be presented in the order that is most useful to users. Users prefer hierarchies, and tend to focus their attention on one level of the hierarchy at a time. This enables them to adopt a more systematic strategy when scanning a page, which results in fewer revisits.

Throughout the design process focus should be kept on the intended audience. Researchers encourage designers to use the appropriate age level language for your primary audience. Try to use everyday language (a readability level of sixth grade or lower; many word processing programs include an option that will automatically show readability levels) (Graham-Clay, 2005). Teachers should monitor their conversation and written communications to ensure educational jargon is avoided. When technical terms or acronyms are used, these should be explained. Audio messages may be appropriate to communicate with parents who have low literacy levels (Williams & Cartledge, 1997).

Many school websites are underutilized because they are not kept up to date. It is imperative that someone reviews the site on a regular basis and keeps the website up-to

date and accurate (removes or archives out-of-date information). It also helps to avoid "Under Construction" pages or messages. Research suggests that web pages should only be posted when you have actual, complete information. These are important steps towards improving the credibility of your site.

DEFINITION OF CONTENT CATEGORIES

Content is the text, data, graphics, etc. provided on a website. One study found that content is the most critical element of a website. Other studies have reported that content is more important than navigation, visual design, functionality, and interactivity. Designers are encouraged to provide content that is engaging, relevant, and appropriate to the audience. In the case of school, it is best to focus on the intended audience and include useful information that most parents will want to know concerning their child. Do not waste valuable resources providing easy access and good usability to the wrong content.

One of the most important pieces of content to include is the school contact information. School contact information, in particular the full name of the school, the address, telephone number (including area code), fax number, and a school email address should be displayed prominently and clearly up front on the home page. Though the site may also provide a "Contact Us" section or school directory, the home page provides quick access to the school's critical contact information without forcing the parents and visitors to hunt for it on the website. It is also beneficial to provide accurate, up-to-date map and driving directions to the school and information about the school's community.

Dunman (1998) and Rutkowski (1998) note that parents who recently moved to the area served by the school, or those who are considering doing this may want to know more about the location of the school and the community. Offering a map and driving directions to school could provide extra encouragement for parents to seek out and visit the school. If the school website does not inform about the community (e.g., about city/school government, local businesses, the school system, geography), it should at least include links to other websites that have this information.

In keeping with the importance of school contact information, various studies support the notion that designers should provide a full list of school administrators, teachers, and staff and their corresponding contact information. It is most common to provide a telephone number or a telephone extension, or an email address in some combination. This section may also include the images of school administrators, staff, and teachers. Parents, who have yet to meet their child's teacher or principal, may find this very useful. They may feel a little embarrassed that they cannot recognize the person they are meeting with (Lunts, 2003). Teacher contact information should also be displayed on their class pages.

Another critical element of content to include is a welcome message for parents. Parents visiting the school website should be greeted warmly. Dunman (1998) suggests that a greeting by the principal and a mission statement may effectively introduce the school to parents. More importantly, in the welcome message the school should stress the

importance of parental involvement in the academic success of the student. In addition, the welcome message should be posted in a prominent place (Berla, 1991).

Aside from contact information, directions, and a welcome message, research has shown that it is important to include a "Frequently asked questions (FAQ)" or "Help" section. The "FAQ" or "Help" section should answer most of the questions about the school routine. For example, school hours, rules for school visitors (parking, checking-in and out in the main office), how to report a student absence, etc (Lunts, 2003). In addition, this section may include school handbooks (a handbook created specifically for parents are desirable) and calendars.

Research also shows that parents benefit from a *"Parents Only" or PTA/PTSA/PTO section* (Lunts, 2003). This section should provide information about events organized for parents or entire families such as open houses, parent nights, lectures and parent workshops, as well as, links to the official PTA/PTSA/PTO. In addition, the section may provide external links to other organizations that support families.

An action research study, which analyzed the effects of a teacher-created web page on parent communication, noted that an online classroom calendar was one of the most beneficial components that a class web page could have. Parents indicated that the classroom calendar kept them better informed about current and upcoming events and activities occurring in the classroom (Nelms, 2003). Teachers trained to use the school

website can provide updates easily accessed by parents regarding homework assignments, test schedules, resource links, and so on. In fact, use of the internet can serve as an "interactive tool for individualizing homework and supporting the involvement of families in the homework process" (Salend, Duhaney, Anderson, & Gottschalk, 2004, p. 65). Parents find online access to items such as lunch menus, special event information, grades, progress reports, report cards, newsletters, special documents for download (permission slips, request forms, etc.), and student/parent handbooks very convenient and beneficial.

In addition to all of the aforementioned content, designers should include a link to the school district website if one is available. District, school and classroom websites ideally should be part of a network of websites that have useful information for parents. These three levels of websites should complement each other and if one level is omitted, websites on the two other levels should compensate for it (Lunts, 2003).

Last but not least, the growth of the Hispanic population has begun to dictate an increase of the diversity of content provided. Hispanics have emerged as the largest minority in the United States (U.S. Census Bureau, 2003). Since 1990, the nation's Hispanic population has increased 58%, up from a total of 22.4 million in 1990. North Carolina is one of seven U.S. states where the Hispanic population has more than tripled (USCCB, 2006). With the immense growth of the Hispanic population, it would behoove schools to provide important school information in Spanish. Welcome messages, registration and enrollment information, newsletters, upcoming events, homework

assignments, and announcements are good examples of documents that should be offered in English and Spanish.

DEFINITION OF COMMUNICATION TOOL CATEGORIES

Even though informing parents about their children's schooling is necessary, it is not wholly sufficient to establishing two-way home-school communication. Besides being informed, parents have to be able to provide and receive feedback to and from teachers and school administration in a reasonable time frame. Technology holds promise to allow home-school communication opportunities not bound by time or location (Brewer & Kallick, 1996). Indeed, the capacity to link homes and schools with new technologies provides many novel opportunities to enhance communication with parents beyond the traditional formats.

The Internet allows parents to communicate with schools through e -mail. Web technology also allows listservs and "mailto" forms to be incorporated in a school website. In terms of supporting parental involvement, listservs, distribution lists, and subscriptions to RSS feeds can be used to regularly disseminate information from the school to parents' e -mail accounts. "Mailto" forms can serve to survey parents, simplify required paperwork to become a volunteer, etc.

Instant messaging can provide a unique opportunity to interact with other parents and the teacher or principal. Instant messaging supports synchronous communication, in the form of "one-to-one" or "many-to-many" interactions. Therefore, including instant

messaging in a school/classroom website can promote a large spectrum of home-school interactions.

Among other advantages of the website technology is that it can incorporate online message boards (El-Tigi & Branch, 1997; Ivers & Barron, 1999). Two-way home-school connections can benefit from online message boards. Online message boards can be useful for supporting communication between parents, teachers and school administration because they allow everyone to raise a question, express concern, give advice, and so forth.

In fact, email and online message boards are advanced elements of website design that are deemed interactive. However, some recent advances in technology enhance the ability for schools to share information with the family. Blogs and podcasts are two innovations in particular that will extend the means that schools have to disseminate information to parents.

Blog is short for weblog. A blog is a frequent and chronological publication of comments and thoughts on the web in the form of a journal or diary that is available on the web. The activity of updating a blog is "blogging" and someone who maintains a blog is a "blogger." Blogs are typically updated daily using software that allows people with little or no technical background to update and maintain the blog. They usually include reflections and opinions for others to read online. Blogging can be an effective communications tool for small groups of people to keep in touch with each other.

Principals and teachers can use blogs to share their thoughts, comments, reflections, and observations with parents.

A podcast is a multimedia file distributed over the Internet using syndication feeds for playback on mobile devices and personal computers. A podcast is distinguished from other digital audio formats by its ability to be downloaded automatically using software capable of reading feed formats such as RSS or Atom. Podcasting is an automatic mechanism whereby multimedia computer files are transferred from a server to a client, which pulls down XML files containing the Internet addresses of the media files. In general, these files contain audio or video, but also could be images, text, PDF, or any file type. Users can receive podcast feeds on their PC or portable media players such as iPods or MP3 players. Audio and video technology can be used in a number of ways via podcasts to communicate to parents what is occurring in school. Aronson (1995) suggests that schools create a brief video to welcome new families to the school including an introduction, school tour, and an invitation to become involved. One school expanded this idea and developed 50 short videos to be circulated to families on a variety of topics (Clevenson, 1999). For example, one 12-minute video outlined how parents could help their Grade 8 children with a science research project. Clevenson (1999) noted that this particular video had a significant impact on student success by increasing the number of projects completed. Class activities can be videotaped and presented to a larger audience at convenient times. In addition, if a server is secure and has sufficient space capacity, the teacher can install a digital video camera in the classroom to broadcast lessons over the Internet. Parents, who are interested to observe how their children learn, may use passwords to view the broadcast. In addition, teachers can record any fragment of the

lesson they want, digitize it and make available for parents to view at their convenience.

Children may create digital portfolios that can be shared with parents on an ongoing

basis. Ultimately, student learning plans may be accessed online, enabling goals and

progress to be shared with parents. Parents reported that the videos enhanced

communication with teachers and their understanding of their child's school program

(Alberto et al., 1995). Audio announcements can be used to provide welcome messages

also and other specific information related to weather and school activities.

The following section lists the categories established from the literature review.

These categories have been revised to ensure greater reliability and repeatability and will

be applied to all of the websites making up the study sample.

CATEGORY SYSTEM

Structure:

- Limits graphics [uses relevant (school related) pictures and graphics and several small images rather than a single large image on a page] and uses the most compact formats (consistently uses GIF file format for buttons, icons, horizontal rules, and other custom graphics and JPEG file format for photographs) where appropriate

- Uses easy to read, standard fonts [Times New Roman, Arial, Verdana, Sans Serif - not a lot of cursive or atypical text (Gothic, etc.)]

- Eliminates backgrounds or use only low-resolution backgrounds

- Avoids the use of hard to read text colors such as yellow

- Avoids using hard to read text color combinations such as red on black

- Eliminates distracting or annoying effects such as flying text or moving objects

- Avoids slanted or special effect text and scripts or ornamented fonts

- Avoids pages that require large amounts of scrolling

- Uses a logical pattern for the grouping of information (group related information and functions together)

- Displays critical contact information (School Address, Telephone Number, Fax Number, email address, principal\teacher\staff contact info, online calendars, upcoming special events) prominently (near the top of the page) and clearly

- Uses the appropriate age level language for your primary audience - use everyday language (a readability level of sixth grade or lower; many word processing programs include an option that will automatically show readability levels)

- Keeps website up-to date and accurate (e.g., no news, calendar events, special announcements, or homework assignment from the previous school year; special/upcoming events calendar should actually have an upcoming event)

- Avoid "Under Construction" pages and "404 Page not found" messages

Content:

- Presents the full school name, address, and telephone number (including area code) on the home page

- Provide accurate, up-to-date map and directions to the school

- Provides a full, up-to-date list of school administrators, teachers, and staff

- Includes a link to the local school board or superintendent's office websites if available

- Provides a welcome message for parents that stress the importance of parental involvement in their success of their child's education

- Includes a "Frequently asked questions (FAQ)" or "Help" section

- Provides an *"Parents Only" or PTA/PTSA/PTO section*

- Includes community information (information about city/area)

- Provides important school information in Spanish (contact information, directions, registration/enrollment instructions, welcome message, newsletter, homework assignments, etc.)

- Clearly displays teacher contact information

- Displays school/classroom calendars

- Displays homework assignments

- Displays up-to-date lunch menus

- Displays Up-to-date special event information

- Displays school and/or classroom newsletter

- Presents grades

- Offers progress reports

- Provides Report Cards

- Provides special documents for download (permission slips, forms, newsletters, etc)

- Offers a parent or student handbook

Features/Tools:

- Email Forms/Distribution List/Listserv

- Chat/Instant Messaging

- Online Message Board

- Weblog

- Podcasts

RESULTS

The design guidelines and communications comprising the category system established in the literature review are some of the most encouraging in terms of delivery useful content and improving communication between schools and families. But how many of our local schools are incorporating these elements into their websites? Out of the original sample (N=149), three schools were found to have no website and one school

had a home page with no functional links. These sites were eliminated from

consideration. The content of the remaining websites (N=145) was analyzed and the

number and percentage of 'yes' and 'no' responses for the application of each category

was recorded. The results of this content analysis present a fairly consistent theme of the

types of structure, content, and communication tools being provided by elementary

schools. Some types of information are widely offered, while others are not or rarely

found at all. The findings for each component will be discussed in this section.

STRUCTURAL CATEGORY RESULTS

Table 1. Summary of Structural Category Analysis

Category	Yes	PCT	No	PCT
Limits graphics	133	91.72%	12	8.28%
Uses easy to read, standard fonts	140	96.55%	5	3.45%
Eliminates backgrounds or use only low-resolution backgrounds.	134	92.41%	11	7.59%
Avoids the use of hard to read text colors such as yellow.	142	97.93%	3	2.07%
Avoids using hard to read text color combinations such as red on black.	139	95.86%	6	4.14%
Eliminates distracting or annoying effects such as flying text or moving objects.	108	74.48%	37	25.52%
Avoids slanted or special effect text. Especially avoid scripts or ornamented fonts.	129	88.97%	16	11.03%
Avoids pages that require large amounts of scrolling.	9	6.21%	136	93.79%
Uses a logical pattern for the grouping of information	142	97.93%	3	2.07%
Displays critical contact information prominently and clearly .	97	66.90%	48	33.10%
Uses the appropriate age level language for your primary audience	145	100.00%	0	0.00%
Keeps website up-to date and accurate (Remove out-of-date information).	124	85.52%	21	14.48%
Avoid "Under Construction" pages and "404 Page not found" messages.	100	68.97%	45	31.03%

Most of the school websites faired well in seven of the thirteen categories concerning providing the proper structure for the efficient delivery of critical information. Every school used appropriate language for their primary audience. Over ninety percent of the school websites:

- Limited graphics and used the most compact formats where appropriate
- Used easy to read fonts, standard fonts
- Eliminated the use of backgrounds or high resolution backgrounds
- Avoided the used of hard to read text colors and text/background color combinations
- Uses logical patterns for grouping information

For the most part schools were able to avoid the use of slanted or special effect text and ornamented fonts (88.97%) and keep their website up-to-date and accurate (85.52%). However, a quarter of the schools (25.52%) continue to implement a plethora of distracting and annoying effects, most commonly, animated GIFs and scrolling texts. Animated GIFs were found most often on school home pages and teacher class pages. The movement was successful at attracting attention but was not useful or relevant. The greater number of animated GIFs appeared on teacher class pages, most often in an attempt to capture the attention of their students. Scrolling text most often was used to display special announcements and in a few instances actually display the schools contact information. The scrolling text becomes very distracting as the user attempts to review other aspects of the page. Using scrolling text to display the school's information makes if difficult for users to record the information. Most often they would have to watch the information scroll by more than once to ensure that they had recorded the information properly.

The schools in the sample faired less favorably in the remaining three categories concerning structure of the website. Almost one third (31.03%) of the schools are displaying "Under Construction" pages and messages or have links that return "404 page not found" error messages. Schools used "under construction" messages and pages to announce upcoming changes to the site. Most of the "404 page not found" error messages occurred when clicking on links to teacher class pages. In most of these cases, by looking at the path in the hypertext link, it is easy to ascertain that the page simply had not been posted to the server.

The second most notable structural failure was not displaying critical information (school and staff contact information, maps/directions, school and class calendars, homework assignments, etc.) prominently and clearly. Over one-third (33.10%) of the schools in the sample did not compare well when analyzed against this category. Most schools failed to place critical information near the top of each page where it could be clearly seen, especially when it came to display the schools address and telephone number. Many schools in this thirty-third percentile placed the school contact information at the very bottom of the home page, therefore forcing users to scroll to find it.

The most notable failure resulted from the category concerning avoiding pages that require large amounts of scrolling. Most schools (93.79%) included pages that required scrolling. The largest occurrence of scrolling appeared on school home, staff directory, and teacher class pages. Many of the pages required scrolling vertically three pages or more.

CONTENT CATEGORY RESULTS

Table 2. Summary of Content Category Analysis

Category	Yes	PCT	No	PCT
Presents contact information on the home page	122	84.14%	23	15.86%
Provide accurate, up-to-date map and directions to the school.	78	53.79%	67	46.21%
Provides a full list of school administrators, teachers, and staff.	122	84.14%	23	15.86%
Includes a link to the local school board or superintendent's office websites if available.	133	91.72%	12	8.28%
Provides a welcome message for parents	34	23.45%	111	76.55%
Includes a "Frequently asked questions (FAQ)" or "Help" section.	17	11.72%	128	88.28%
Provides an *"Parents Only" or PTA/PTSA/PTO section*.	132	91.03%	13	8.97%
Includes community information (information about city/area).	14	9.66%	131	90.34%
Provides important school information in Spanish	17	11.72%	128	88.28%
Clearly displays teacher contact information.	66	45.52%	79	54.48%
Displays school/classroom calendars.	122	84.14%	23	15.86%
Displays homework assignments.	30	20.69%	115	79.31%
Displays up-to-date lunch menus.	65	44.83%	80	55.17%
Displays Up-to-date special event information.	108	74.48%	37	25.52%
Displays school and/or classroom newsletter	66	45.52%	79	54.48%
Presents grades.	1	0.69%	144	99.31%
Offers progress reports.	1	0.69%	144	99.31%
Provides Report Cards.	1	0.69%	144	99.31%
Provides special documents for download	94	64.83%	51	35.17%
Offers a parent or student handbook.	44	30.34%	101	69.66%

The school websites in this study sample faired well in two of the twenty categories pertaining to content. Overall, schools provided links to their school district, school board, or superintendent websites, if available (91.72%), and provided a "Parents Only" or PTA/PTSA/PTO section (91.03%). Over eighty percent (84.14%) of the school websites:

- Present contact information on the home page
- Provide a full list of school staff (staff directory)
- Display school and/or classroom calendars

It was discovered that roughly a quarter (25.52%) of the school websites lacked up-to-date special event information. It is important to designate someone to regularly review and maintain the site and ensure that out-of-date or irrelevant information is removed in a timely fashion. Keeping the site up-to-date adds to its credibility. Over one-third (35.17%) of the sites neglect to provide special documents, such as permission slips, newsletters, handbooks, and request forms, for download. Offering these documents online makes it more convenient for parents. Forty-six percent (46.21%) fail to provide directions to the school; however, many of the school district websites provided maps and driving directions the schools in each school's profile. Fifty to seventy-five percent of the schools fail to:

- Offer an online school, classroom, or PTA newsletter
- Clearly display teacher contact information
- Display up-to-date lunch menus
- Provide a student or parent handbook

Instead of clearly displaying a teacher's email address, many schools website designers used "mailto" forms which requires the user to hover over the name of the teacher to see their email address in the status bar of the browser. This task is not difficult for more technically savvy users but may not be as obvious to novice users. Only twenty-three percent (23.45%) of the school websites offer a welcome message to parents that stress the importance of parental involvement in the success of their child's education. A number of schools offered welcome messages but most spoke to things coming up for the new school year. Some schools encouraged parents to visit the school but did not emphasize the importance of their involvement. Many schools also did not display homework assignments from teacher class pages (79.31%), provide a "FAQ" or "Help" section (88.28%), or offer any important content in Spanish (88.28%). In addition, over

90 percent of the sample do not offer information about the community in which the school was located. Some district websites compensated for this by providing some of this information. This forces the users to have to search multiple sites to find information that they deem important. Only one school in the sample enabled parents to view their children's grades, progress reports, and report cards.

COMMUNICATION TOOL CATEGORY RESULTS

Table 3. Summary of Communication Tool Category Analysis

Category	Yes	PCT	No	PCT
Email/Listserv/Distribution List	30	20.69%	115	79.31%
Chat/Instant Messaging	0	0.00%	145	100.00%
Online Message Board	3	2.07%	142	97.93%
Weblog	4	2.76%	141	97.24%
Podcast	4	2.76%	141	97.24%

No school website in this study sample, faired well in the five categories pertaining to communication tools. Many schools used "mailto:" forms but only 30 (20.69%) offered the ability to email teachers and staff through the website without having to already have an email client installed on their personal computer. These websites provided email forms using JavaScript, or secure access email accounts, and/or the ability to subscribe to a distribution list or listserv, usually through Yahoo or Google Groups. No schools offered chat rooms or instant messaging as a communication tool. Three schools (2.07%) provided online message boards which were mostly used to initiate discussion threads. Four schools (2.76%) utilized blogs and podcasts. In the four cases, principals or teachers used a blog to offer parents insights, comments, and reflections concerning what was occurring at the school and in the classroom. Schools

used podcasts for welcome messages, storytelling, school news, and special announcements.

DISCUSSION

The results of this content analysis presented a clear image of the types of structure, content, and communication tools being provided by elementary schools in this area. Schools in the study sample faired far better against the structural categories than they did against the content or communication tool categories. This indicates that most of these school websites are informative but overall do not provide the content and interactive communication tools required to be effective in delivering useful information to parents and facilitating two-way home-school communication as a means of enhancing parental involvement.

Most websites from the study sample limited graphics and did a good job of using easy to read fonts, no or low-resolution backgrounds, and avoided hard to read text color and text/background color combinations. The schools also did reasonably well grouping information logically, keeping their sites up-to-date, and avoiding the use of special text and ornamented fonts. The negative aspects of website structure exhibited more prevalently were the use of animated GIFs and scrolling text. Items that move constantly should never be included because they tend to have an overwhelming effect on the user's peripheral vision (Nielson, 1997). A third of the schools failed to display critical information prominently. Following a hierarchical format, the most important information needs to reside near the top of the page ("above the fold"), gradually displaying less important information has you go down the page. Due to poor placement,

and a great majority of sites allowing large amounts of scrolling, important information would most often end up "below the fold" where users may overlook it by failing to scroll down far enough or spend extra time in search of that information. Some scrolling is acceptable (three pages or less in some cases), but it should be minimized as much as possible (Nielson, 1996). Designers should break up longer pages into smaller pages and link them (Leask & Pachler, 1999). One in three schools failed to avoid "under construction" pages and "404 page not found" errors. The use of these methods can erode the credibility of the website. Research supports only posting links when there is actual information to display.

As stated earlier, research supports that content is even more important than navigation, visual design, functionality, and interactivity. The school websites in this study sample faired well against only five of the twenty categories pertaining to content. Schools provide links to their school district, school board, or superintendent websites, if available, offer "Parents Only" or PTA/PTSA/PTO sections, present contact information on the home page, provide a full list of school staff, and offer online school and/or classroom calendars. Conversely, it was discovered that roughly a quarter of the school websites lacked up-to-date special event information. It is important to keep parents informed of upcoming events at school and in the classroom. It is imperative to designate someone to regularly review and maintain the site and ensure that out-of-date or irrelevant information is removed and new information is presented in a timely fashion. Keeping the site up-to-date adds to its credibility and increases its potential to be used. Over one-third of the sites neglect to provide special documents, such as permission slips,

newsletters, handbooks, and request forms, for download. Offering these documents online makes it more convenient for parents. Forty-six percent (46.21%) fail to provide a map and directions to the school. Even though many of the school district websites provided maps and driving directions to the schools in each school's profile, this forces the user to leave the school site to look at an additional source to find what they need. The majority of the schools also fail to:

- Offer an online school, classroom, or PTA newsletter
- Clearly display teacher contact information
- Display up-to-date lunch menus
- Provide a student or parent handbook
- Present a welcome message to parents that stress the importance of parental involvement in the success of their child's education
- Display homework assignments from teacher class pages
- Provide a "FAQ" or "Help" section
- Offer any important content in Spanish
- Offer information about the community in which the school was located
- Display student grades, progress reports, and report cards

Some district websites compensated for this by providing some of this information. The district websites sometimes offered school calendars, newsletters, lunch menus, parent handbooks, district-wide "FAQ" or "Help" sections, and community information but again this forces the user to have to search multiple sites to find all information that they deem important.

The schools comprising the study sample faired the worst against the five categories concerning communication tools. Only one in five schools offered the ability to email teachers and staff through the website without having to already have an email client installed on their personal computer. These websites provided email forms using JavaScript, or secure access email accounts, and/or the ability to subscribe to a

distribution list or listserv, usually through Yahoo or Google Groups. No schools offered

chat rooms or instant messaging as a communication tool. Three schools incorporated the

use of online message boards which were mostly used to initiate discussion threads. Four

schools utilized blogs and podcasts. The blogs offered parents insights, comments, and

reflections concerning what were occurring at school and in the classroom. Schools used

podcasts for welcome messages, storytelling, school news, and special announcements.

The biggest failures of the school websites in the sample occurred when applying

categories concerning content and communication tools. In regards to content categories,

so few schools displayed homework assignments, grades, or progress reports or offered

important content in Spanish (registration/enrollment information, welcome message,

parent/student handbook, special announcements). To go one step further, many schools

did not consistently offer teacher class pages. It appears that many schools provide space

for class pages but make it optional for teachers to actually post data to their page. In

many cases, there was no page or there was a small amount of data which essentially

acted as a place holder. School districts and schools have to afford teachers the time,

training, and technical support to update their class pages. At that point, class pages can

become a powerful medium for informing parents about what is occurring in the

classroom. Teachers could then use their pages to post class announcements and

homework assignments, and offer parents the opportunity to view their child's grades and

perhaps progress reports. Also, given the growth of the Hispanic community, it was

surprising to see so few schools (11.72%) offer useful content in Spanish. The findings

from one study reflected that conventional avenues for involving parents in school were

closed to many Hispanic parents because specific cultural knowledge was required in order for them to participate effectively, but that could be changed through the use of culturally responsive communication (Delgado-Gaitan, 1991).

Concerning tools, many school websites in the sample are informative but not interactive. The most commonly found communication tool was email. The greater majority of schools employed the use of "mailto" forms, secure access email accounts, and subscriptions to listservs, distribution lists, and RSS feeds. Otherwise the use of the other communication tools was almost non-existent. No schools used Chat or instant messaging for home-school communication and only two percent of the schools used online message boards, Weblogs, or Podcasts to relay information to parents.

A small number of schools incorporated and implemented several useful tools and concepts which could benefit home-school communication. Three tools in particular are Citrix, Blackboard, and EDLine. One school district enabled their elementary schools to utilize a Citrix client called "Connect 2 School". Citrix is an application that runs on a server. It provides a standard desktop that includes popular software such as the Microsoft Office Suite and browsers such as Internet Explorer. Using a Citrix account, teachers and students can login from home and have access to all the corresponding software, browsers, and files that they would have at school. As long as the teacher or student has internet access at home and the Citrix client installed, they did not have to have Microsoft Office or any of the other software installed on their machines at home. It also prevented teachers from having to use floppy disks, memory keys, or other devices

to transport data to and from school. Instead they could store files on the server for access whether they were at home or at work. Having access to an application such as this, could potentially encourage teachers to create more class documents and correspondence electronically which would lead to an increase of those documents and artifacts available through the course website. Also a large number of schools used Blackboard Academic Suite (Release 7.0), a web application that simulates a virtual classroom. It is a very popular and widely used product in secondary and post-secondary institutions, but it surprising to see it used as extensively on the elementary school level. The application allows instructors to post homework assignments and class announcements and incorporates information communication tools such as online discussion board and white boards, and a chat room. Teachers can use this product to teach class remotely, using the online white board to write notes or draw diagrams and using chat to communicate with students. Most of the school websites in the study sample that incorporated this product did so as a medium for teacher class pages. EDLine allows hosting of school and/or class web pages and along with Veracross offers secure access to student grades, interim reports, report cards, and homework assignments.

Some other useful concepts implemented were teacher bios, audio welcome messages, virtual tours, RSS feeds for school news, download centers, and well presented special event calendars and maps and directions to the school. One school, in particular, did an outstanding job of ensuring that each teacher had a class page on the school website and for each teacher and teacher's assistant there was a welcome message, photograph, and bio. It was a great method to welcome parents, encourage them to be

involved in their child's education, and allow parents to get to know the background, experience, and interests of the teacher and the assistant. Another school used podcasts to provide an audio welcome message and school news to parents. This was another effective method for making parents feel more welcome. Another creative method for welcoming parents was the use of a virtual tour. Very similar to implementations on real estate website, parents could use this tool to view the interior and exterior of the school and the school grounds (athletic fields, playground, etc.), which was a very innovative way of introducing parents to the school. A few schools offered parents the ability to subscribe to RSS feeds in order to receive school news systematically. Some schools offered download centers which provided access to an extensive amount of downloadable documents including permission slips, request forms, handbooks, lunch menus, and registration information. Other notable implementations were some nicely constructed month-at-a-glance special event calendars, and one school which provided not only maps and directions to their school but to all the other schools in their conference to encourage parents to travel to other schools to support their children who participate in athletics.

CONCLUSION

Overall, the schools in this study sample need to do a better job of providing useful content and information communication tools that promote the effective delivery of useful content to parents and benefits home-school communication. By successfully integrating useful and relevant content along with multiple channels of viable communication, the school website can act as a "one-stop" source for information concerning the education of their child. Technology can not overcome all the obstacles

that prevent parent involvement and hinder home-school communication, but it can be very beneficial in supplementing the more traditional methods of home-school communication, such as, parent-teacher conferences, phone calls, and written correspondence. School websites which provide useful content to parents, such as school and teacher contact information, online calendars, homework assignments, and integrate information communication technologies, such as, email, instant messaging, online message boards, blogs, and podcasts further extend the boundaries of communication and allow home and school to communicate synchronously and asynchronously twenty-four hours a day, seven days a week. It allows parents who travel extensively, have work schedules that do not afford the opportunity for regular school visits and face-to-face interactions with their child's teacher, or may be lack convenient transportation to stay more informed about what is occurring at their child's school and in the classroom. The more informed the parent is, the more apt they may be to participate in their child's education. Research shows that the more involved the parent or parents become, the better the chance that the child will have enjoy academic success. This is especially important during the early childhood years, when children are not always able to convey problems that may be having in the classroom.

The research outcome from this project will prompt further study into what makes school websites more conducive for delivering useful information to parents and facilitating two-way home-school communication. The intention is to develop a set of design guidelines and best practices that schools can use to ensure that their websites not

only provide useful content but also promote home-school communication as a means of increasing parental involvement.

This next iteration of this exploratory study can be improved by first continuing to review published literature in the area. As more and more user studies involving parents and teachers are conducted, their information needs are further defined. This, along with recent advancements in information communications technology, will necessitate continued research into what additional content and communication tools are more conducive to home-school communication. This research will help to further inform and refine the category system that has been established. The next step would be to solicit the help of subject matter experts to help revise the categories as necessary to maximize mutual exclusivity and exhaustiveness. These same subject matter experts can also be asked to help test the methodology. Another area of improvement would be to broaden the sample size in order to more accurately generalize over a larger population. By broadening the sample size it provides a better view of how schools are currently using their websites to facilitate home-school communication and use that analysis to enhance the category system for the next iteration of the study. One final area of improvement would be to enlist additional coders to perform the content analysis. By using multiple coders, it will possible to compare the results and evaluate if any of the categories are ambiguous in any way. These improvements will help improve the validity, reliability, and repeatability of the next iteration of this study.

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APPENDIX

DATA COLLECTION FORM

School Name: _____

CATEGORY SYSTEM

Structure:

Does this site limit graphics and use the most compact formats where appropriate?
For example, does the site consistently:

- Use only relevant pictures and graphics (e.g., pictures of school, staff members, and school events)

- Use several small images rather than a single large image on a page

- Use GIF file format for buttons, icons, horizontal rules, and other custom graphics and JPEG file format for photographs (Right click on the picture or graphic and select properties to reveal file format and size)

Yes ___ No ___

Does this site use easy to read, standard fonts (e.g., Times New Roman, Arial, Verdana, Sans Serif - not a lot of cursive or atypical text (Gothic, etc.))   Yes ___ No ___

Does this site avoid the use of background images or use only low-resolution (solid color) backgrounds? Yes ___ No ___

Does this site avoid the use of hard to read text colors such as yellow? Yes ___ No ___

Does this site avoid the use of hard to read text/background color combinations such as red on black? Yes ___ No ___

Does this site avoid the use of distracting or annoying effects such as flying text or moving objects (e.g., animations) Yes ___ No ___

Does this site avoid the use of slanted or special effect texts (Especially avoid scripts or ornamented fonts)? Yes ___ No ___

Does this site avoid the use of pages that require large amounts of vertical scrolling (three pages or more) or any horizontal scrolling? Yes ___ No ___

Does this site uses a logical pattern for the grouping of information (group related information and functions together)? Yes ___ No ___

Does this site display critical contact information (School Address, Telephone Number, Fax Number, email address, principal\teacher\staff contact info, online calendars, upcoming special events) prominently (near the top of the page) and clearly? Yes ___ No ___

Does this site use the appropriate age level language for your primary audience - use everyday language (a readability level of sixth grade or lower; many word processing programs include an option that will automatically show readability levels – In Microsoft Word this can displayed using the spelling and grammar function)? Yes ___ No ___

Is this site up-to date and accurate (e.g., no news, calendar events, special announcements, or homework assignment from the previous school year; special/upcoming events calendar should actually have an upcoming event)? Yes ___ No ___

Does this site avoid the use "Under Construction" messages or hypertext links that return "404 Page not found" error messages? Yes ___ No ___

Content:

Does the site display the school name, address, and telephone number (including area code) on the home page? Yes ___ No ___

Does the site provide an accurate map or directions to the school? Yes ___ No ___

Does the site provide a full list of school administrators, teachers, and staff? Yes ___ No ___

Does this site include a link to the local school district, school board, or superintendent's office websites if available? Yes ___ No ___

Does this site provide a welcome message for parents that stress the importance of parental involvement in the success of their child's education? Yes ___ No ___

Does this site include a "Frequently asked questions (FAQ)" or "Help" section? Yes ___ No ___

Does this site provide a *"Parents Only" or PTA/PTSA/PTO section?* Yes ___ No ___

Does this site include community information (information about city/area)? Yes ___ No ___

Does this site provide important school information in Spanish (contact information, directions, registration/enrollment process, welcome message, newsletter, homework assignments, etc.)? Yes __ No ___

Does this site clearly display teacher contact information (telephone number, telephone extension, or email address) in staff directory or on the teacher's classroom webpage? Yes ___ No ___

Does this site offer school and/or classroom calendars? Yes ___ No ___

Does this site display specific homework assignments for any class? Yes ___ No ___

Does this site provide an up-to-date lunch menu? Yes ___ No ___

Does this site display up-to-date special event information? Yes ___ No ___

Does this site provide a school or classroom newsletter? Yes ___ No ___

Does this site enable parents to view their child's:

- Assignment grades Yes ___ No ___

- Progress reports Yes ___ No ___

- Report cards Yes ___ No ___

Does this site offer special documents for download (permission slips, forms, newsletters, etc) in a Microsoft Word or PDF file format? Yes ___ No ___

Does this site provide a parent or student handbook? Yes ___ No ___

Features/Tools:

Does the site offer the use of email forms or the ability to subscribe to a school or PTA listserv, or distribution list? Yes ___ No ___

Does this site provide parents with the ability to communicate with their child's teacher through a chat room or by using instant messaging? Yes ___ No ___

Does this site provide an online message board? Yes ___ No ___

Does this site use a weblog in any capacity to inform parents about what is occurring at the school or in the classroom? Yes ___ No ___

Does the site use podcasts in any capacity to inform parents about what is occurring at the school or in the classroom? Yes ___ No ___