

# Literature Review

What makes a good school website,  
why build one and is there help in doing so?

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**Contents**

Abstract: ..... 3

School Based Websites ..... 5

    Qualities of a “Good” website ..... 6

    School Website Evaluation Tools ..... 10

    Creating Your Own School Website ..... 15

    Benefits of Web Resources ..... 17

Parental Involvement ..... 18

    Motivations for Involvement ..... 19

    How do schools attempt to increase parental involvement? ..... 20

Findings ..... 27

Conclusion ..... 27

Future Studies ..... 29

## Website Qualities, Benefits and Requirements

### Abstract:

The nation's continued investment in school-based technology has resulted in significant progress toward closing the digital divide (Judge, Pucket & Bell, 2006). The purpose of this study is to examine school district websites and online resources and identify differences between website quality based on instruments developed to assess website quality across the various socioeconomic levels. Literature reviewed (a.) identified website evaluation tools, (b.) determined qualities of "good websites", (c.) explained how websites can be a gateway to parental involvement. The sample for this study will be selected from the 127 school districts that make up Long Island's public schools. We will be examining 50 school district websites in Nassau and Suffolk counties on Long Island, New York. This study will be an exploratory case study in which Quantitative data will be collected from which we will provide Qualitative analysis from the examination of the 50 school district websites from the four levels of Socioeconomic Levels in the Long Island landscape. Research for this study is ongoing. The results of this study will be presented at SOURCE. As educators we know that learning occurs beyond the walls of our classroom and the development of a quality website can enrich all student's learning opportunities by providing helpful resources for parents, information on school events and a place for parents to view student progress and work. The research results suggest the need for Professional Development to help teachers develop meaningful websites for students and parents from all socio-economic levels.

## Website Qualities, Benefits and Requirements

The National Educational Technology Standards (NETS) for students not only states that students should have a firm grasp of the basic concepts and operations of technology, these standards also state that students should use these skills to enhance their learning experience while using various forms of multi-media to collaborate and interact with their fellow students, as well as, other audiences. The New York State Board of Education plans on spending 17.2 million dollars on Information Technology in the 2007-2008 school year. School-based websites are an excellent indicator of how schools use Information Technology throughout their school and their curriculum. With all this funding, how do our school's websites measure up? Are our schools living up to their potential with respect to technology? Are schools taking the opportunity to enhance communication with their student's parents and the community at large? And, what effect does this investment on technology have on the students themselves? The NETS also suggest that our teachers act as role models and demonstrate their knowledge of technology operations and concepts. The standards call for teachers to provide students with a technology-rich environment for them to flourish. However, are our teachers properly trained and prepared?

"The nation's continued investment in school-based technology has resulted in significant progress toward closing the digital divide" (Judge, Pucket & Bell, 2006). This research study is a review of Long Island School District's websites as a resource that can range from basic general contact information to an elaborate display of educational resources forming a link between the schools, parents and the community at large. Our literature review consists of previous research that analyzes school-based websites, determines qualities of "good websites" and identifies school website evaluation tools, including CVS (Content Validity Scale), WebMAC (Websites Analysis Checklist Professional) and Bobby. This literature review will look at websites as being

## Website Qualities, Benefits and Requirements

a gateway to parental involvement whereas a quality website can provide helpful resources for parents, information on school events and a place for parents to view student progress and work. In addition to the analysis school websites, our review will explain the need for Professional Development to help teacher develop meaningful websites. This literature review is drawn from a broad range of recent literature across four disciplines. In Table 1, we identify key characteristics of 44 articles of the more than eighty articles reviewed as part of this empirical research. The characteristics include the author, date, purpose and linking quote or summary.

### School Based Websites

Why have a school website? The benefits include the following: linking schools in the district, developing communication in classes, grade levels, and cultures, encouraging parental involvement, presenting information to visitors about the school and acquisition of technology skills (Miller, Adsit & Miller, 2005). The digital divide holds with it a social justice goal to ensure that students regardless of socioeconomic status have equal access to new technologies both in the form of information and communication. The No Child Left Behind Act Of 2001, the Enhanced Education Through Technology program identifies among its purpose “to support local efforts using technology to promote parent and family involvement in education and communication among students, parents, teachers, principals, and administrators” (Education, 2001).

The importance of the Internet as an essential addition to the school landscape is becoming very evident (Hartshorne, Friedman, Algozzone & Isibor, 2006). The elementary school classroom is the foundation for the learning process and, in the development of such; teachers need to find new and exciting ways for knowledge attainment. The use of technologies, such as the Internet, allows students to communicate globally, parents to become more involved

## Website Qualities, Benefits and Requirements

and provides a place for supplemental curriculum material to be accessed by all persons associated with the educational process. “The Internet is an attractive source of information for parents because of its round-the-clock availability, speed, and enormous range of information” (Martland & Rothbaum, 2006, p. 839). A high school website can provide a comprehensive illustration of a school’s curriculum, and its development can be a collaborative effort, addressing the goals and needs of different elements within the school (Hartshorne, Friedman, Algozzone & Isibor, 2006).

### Qualities of a “Good” website

There are three main areas to focus on when assessing a school’s website. First and foremost, look at the content of the site. Most sites include the physical location of the school, as well as, the listing of contact information for the school faculty and staff. Some may even, have a school calendar online. But, how many of our schools take their site to the next level to include the school curriculum, classroom homepages, homework postings, and links and web resources for parents, students and teachers, or even, a showcase of student work? Not only does the content count when measuring the quality of the site, so does the overall structure of the website. Sites should have an eye-catching home page, be easy to navigate, have all live links, include credible information, have clear directions, host attractive visuals, be interactive, include contact information, have user control, and be fun to explore. (Riccardi, Easton & Small, 2004) And lastly, sites should be accessible to all and provide quality motivational materials for students, parents and teachers.

“While at one time, simply having a site up on the Web meant that your school was tech-savvy, that you were a visionary, schools that now want to make this statement with a Web site must do something to stand out.” (Shaw, 2002, p. 48) School websites started making a presence

## Website Qualities, Benefits and Requirements

on the web in the mid 1990's, with their goal being simply to have a presence on the web.

Today, it is not so simple for schools to make a lasting impression on the web. Schools now have to increase the technology used to so-called "stand out." In Trevor Shaw's article, "The School Web Site: A Servant to Many Masters," Shaw states that schools are now using Flash and Shockwave animation, as well as, Grades databases to keep their sites cutting-edge.

Shaw also states that "the mission of the school's site should reflect the mission of the school" (Shaw, 2002, p. 48). If the goal of today's school website is to show how technologically advanced the school is, then schools need to re-evaluate their mission and find the right balance between technology and the school's mission, which should focus on the academic achievement and well-being of its students. Balancing the mission and goal of a school's website, is not the only balancing act. It is a constant battle to maintain the professionalism and content control and encourage teacher participation at the same time. The Internet differs from other popular media in its lack of monitoring or screening, such as done by an editor or fact-checker in print or broadcast news (Martland & Rothbaum, 2006). Teachers who want to "produce and update useful class content" may not have the skills to create a professional looking website, nor would they want to. Teachers have a totally different audience, their students. The goal for a student-focused website differs greatly from that of a school's homepage. For a student-focused website, teachers should keep in mind the educational reading level of their audience, include highly-motivating content and contain easy-to-use navigation.

Another conflict that occurs when maintaining a school website is the delicate balance of public relations versus the privacy of its students. Schools may want to publicize school events and/or highlight student work without infringing on the privacy of students and their families.

## Website Qualities, Benefits and Requirements

Shaw states that this is easily remedied by creating password protected pages for students and their families. All and all, websites have come a long way from back when they were simply just online “brochures” for their school. Different groups including parents, teachers and students have different interests in the content of the school’s website. It is the job of the webmaster and graphic designers to keep an overall balance of the website to sustain the interests of all concerned parties.

Most school sites are established by a committee. In addition to making the site easy to navigate and developed with minimum load time, the committee determines what components will be included in the site. Those resources range anywhere from the school’s mission statement to event calendar to links to curriculum related material. "A well-designed system should be able to accommodate a range of users' skills and interests." (Miller, Adsit & Miller, 2005, p. 35)

Six hundred and forty one students in the Cold Springs School District in Catoosa County Georgia participated in a study. Surveys were provided to students, teachers and parents in a total of seventy schools. The study explained that the following features were represented most frequently on school district web pages: school locations, faculty and staff rosters, the school calendar, whereas less frequently items like curriculum information, student work, community information, homework information and internet policy use appeared. Surprisingly, students, teachers and parents all agreed on one thing; they all found homework information highly important. The researchers account for this lack of homework information being posted, partly due to lack of teacher know how and maybe lack of school technical personnel.

In addition to schools hosting their own web sites, some schools also have a school library web page. In an effort to develop quality indication for school library web sites,

## Website Qualities, Benefits and Requirements

researcher Anne Clyde examined and reviewed primary and secondary schools from around the country and world. From this study one thing for certain was determined: “different school libraries may have very different aims and purposes in mind when they create their web sites; and reflecting this, they may be intended for very different groups of users.” (Clyde, 2000) Some of these users include students, teachers, parents, the local community, library staff, prospective school parents, and general users of the Internet. While some sites seemed to be a collection of miscellaneous materials, they also seemed to have miscellaneous goals. Some of the goals included; Internet access for the students and teachers, information for parents, access to commercial databases and library catalogs, support the school curriculum and to highlight student work.

It is a good policy to evaluate sites on a regular basis. By doing so, one can ensure that the site is providing accurate and up-to-date information for its users. Also, in evaluating the site, you can be sure that the site is “reflecting the mission and goals of the school” and that it “presents and appropriate image of the school” (Clyde, 2000). But not all schools do such an evaluation. In fact, since there is “no definitive criteria for school library web sites at this time” (Clyde, 2000). Currently, library websites seems to be a miscellaneous hodgepodge of information. The International Association of School Librarianship has created a School Library Web Page of the Year Award in an effort to promote the creation of school library pages.

Most schools and districts offer little more on their web site than photographs of the school, a list of staff and a few student works (Bellingham Schools, 1996). Four key personnel need to be involved in the development of thorough district and more so classroom web sites. The people include the district library media specialist, the teacher, the principal and the students. Since a web site is a document that is visual by the mass public the principal is required

## Website Qualities, Benefits and Requirements

to review all work posted for material subject and content. Teachers are the most important part of the design team because they need to advise the page developer, inform of curriculum content, classroom schedules and classroom materials. The final members of the design and development team should be the students. With careful staff supervision, students may play a role in the development of web pages, acting as ‘curators’ for virtual museums and producers of good pages (Bellingham Schools, 1996).

School websites are currently limited by accessibility issues for all users and calls for webmasters and developers to address such issues. Accessibility focuses on providing ‘a high degree of usability for people with and without disabilities (Wells & Barron, 2006). Wells and Baron’s research in 2006 set forth to identify school website accessibility which leads to heavy data gathering on the topics of limitations with regard to persons with disabilities. The results show that the majority of sites surveyed did not meet the U.S. Section 508 guidelines. The need for compliance is identified because of school reliance on the use of websites to disseminate information to the masses. The most common issue of non compliance for Section 508 was the lack of Alt tags for images (Wells & Baron, 2006).

A valuable school website is build from within the school community itself and provides to it visitors a memorable and useful experience that includes an opportunity to gather the information they are seeking as well as learn about the goals and mission of the school district. These websites must also be developed in such a way that all visitors can access the information provided. In order to determine if a website is running properly there are numerous website evaluation tools available to administrators, teachers and information technology professionals.

## School Website Evaluation Tools

## Website Qualities, Benefits and Requirements

The Internet can provide easy access to instantaneous knowledge at our fingertips. However, it is important to learn how to critically evaluate websites in order to assess their overall quality. As previously stated a good website provides users with useful content, that is eye catching and accessible. In order to evaluate a school's website based on these three qualities of a school-based website we have identified three particular evaluation tools that can be used to measure the quality and efficiency of the site. Three reliable evaluation tools are as follows: the Content Validity Scale (CVS) and the Websites Motivational Analysis Checklist Professional (WebMAC) and Bobby, which reviews sites for accessibility needs of individuals with disabilities. The CVS, which measures content validity, looks for the following factors: accuracy, currency, credibility, appropriateness and freedom from bias. It uses a "Likert-type scale" ranging from one (strongly disagree) to five (strongly agree.) Unlike, the CVS, WebMAC Professional is more considered with web features that motivate students to learn, rather than focus on the content. Not only are they considered with information being presented in an interesting manner, WebMAC also focused on the following four areas: stimulating, meaningful, organized and easy-to-use. Lastly, Bobby was used because it is the premier tool for support of web accessibility guidelines and regulation" (Riccardi, Easton & Small, 2004).

To determine if school district web sites were aligned with the literature on best practices the researchers had to first design criterion. Each web site can be evaluated by using a checklist that includes sections on design, structure, content and general issues (Hartshorne, Friedman, Algozzone & Isibor, 2006). In a study completed by a group of graduate students at Syracuse University, the students "assess a school or library resource center web sites and provide feedback on how to improve its quality." This study covered over 70 web sites from various schools around the country and even some international schools. The evaluation team consists of

## Website Qualities, Benefits and Requirements

3 members who each acted as evaluation consultants and learned how to use “a critical eye when determining validity in a web resource” (Riccardi, Easton & Small, 2004). Having multiple evaluators when evaluating web sites eliminates some of the bias that may naturally occur when look at these sites.

One aspect of the school websites is Classroom Homepages, which assist students in learning from their teacher, as well as other students. Teachers may choose to publish students' work on their homepages, which can be highly motivating to students. They also have access to vital classroom information such as upcoming assignment deadlines. Homepages are also a great place for teachers to provide access to motivating educational sites for students to look at in their free time, whether that occurs at home or in school. By teacher's previewing these sites, parents can feel confident that their children are viewing safe and accurate information. With technology becoming more readily available to students, classroom activities can be accessed at home, which closes the gap between school and home. Teachers should be conscious of the fact that not all families have access to the Internet at home, although they may gain access from their local library or community center. Parents can view their child's work online or send an e-mail to the classroom teacher when they have a question about their child. In addition to classroom homepages acting as a resource for others, it also helps to project the teacher as a true professional. A teacher's homepage is a reflection of the technological skills that each teacher possesses.

Student motivation and involvement seems to be the focus with regards to online educational resources. But, what exactly motivates students to learn using these online tools. In a study of two sixth grade classes in Singapore, Loh and Williams looked to find the meaning behind what qualities of specific web resources attract students to that particular site. The study

## Website Qualities, Benefits and Requirements

broke down the two classes into 6 groups and used an instrument based on the WebMAC Professional, which “was developed based on a number of theories of motivation and models related to the expectancy-value theory.” (Williams & Loh, 2002, p. 353) Williams & Loh called their instrument the Motivational Analysis Rating Kit, which evaluated three different sites based on the areas of engaging, meaningful, organized, enjoyable and overall perceptions. Each student was allowed to browse the site for 15 minutes prior to completing the survey. What the duo found, not surprisingly in this fast-paced day and age, is that the overall load time is most important to students with content coming in at a close second. Other aspects that the students looked for were interactive features such as discussion forums and multimedia elements, for example, animation, games and sound. All and all when designing your school website, one should keep in mind the motivational strategies that keep students interested in the content without overwhelming or boring them.

When critically analyzing web resources it is important to take a look at various factors including the overall design of the site, content, author, last update time and others. The viewer should focus on quality, design, as well as content. Web sites should have a good visual design including good structure and organization, should be easy to navigate, and have limited graphics, fonts and colors, which allows for easy readability. When traveling the web, check for “dead end” sites, which could be incomplete, inaccurate or outdated. Some teachers may use Critical Evaluation Tools as seen in on [Kathy Schrok's Guide for Teachers](#) (<http://school.discovery.com/schrockguide>), which lists a set of rules for critical evaluation of websites for students and teachers. Schrok's Critical Evaluation Website Guide for Secondary Level students asks the questions: “Who created the page? What organization is the person affiliated with? Can you tell if other experts in the field think this is a reputable page?” The

## Website Qualities, Benefits and Requirements

student's ability to determine the validity of a web page is a vital skill in this age of ever-growing technology.

Similar to the website evaluation, software evaluation focuses on three main areas: content, motivation, and clear presentation. When evaluating the software you must also take into consideration the cost and if it is easy to implement and whether it will be compatible with your teaching style/approach. The Educational Software/Website Effectiveness Survey discussed in the article by Furner & Daigle breaks down software into various issues: user-friendliness, sound, graphics, inter-activeness, adaptability to learner level, free of stereotypes and bias, performance feedback for student and teacher, grammatically correct information, and if it is able to be modified for different types of learners. The survey grades on a scale of 1 to 4 and then categorizes the scores according to age appropriateness, clear instructions, effective beginning, maintains attention, pace, student progress, summarization, feedback/evaluations, transitions, and learning modality.

In 1996, Karen Ivers and Ann Barron conducted a similar study of Elementary School websites. The purpose of their study was to investigate trends in a elementary school's presence on the web examining three major areas: content, design, and purpose. The study was conducted over a two-year period. The first wave of data looked at 55 randomly selected schools from across the United States. The second set of data was collected two years later in 1998 and spanned 107 randomly selected U.S. schools.

They found that over the two years, more schools were starting to use their website for communication and collaboration with others. However, there was a decrease in displayed student work, classroom pages and community information. The researchers also found that schools were starting to hire media specialists and/or technology coordinators to manage their

## Website Qualities, Benefits and Requirements

websites, and that an increasing number of these professionals were females. After looking at the type of information that was hosted on the school websites, the two researchers found the instead of schools listing links to community information, schools choose to include links to educational resources. In addition, these schools were using various multimedia, such as animation, digital photos and webcams, to present the information to individuals that are viewing their site. In the late 1990s, schools were just beginning to make a presence on the web, almost 20 years later our study will determine how school websites have evolved.

### Creating Your Own School Website

Because the Internet is a powerful communication tool for teachers, students, parents and community, it makes sense to develop a Website that provides information about what is going on in school (Washenberger, 2001). One example is the North Rockland School District who in 1996 through their PTA, computer teacher and student volunteers created and maintained web pages, and their students also took part in projects such as creating an online school newspaper, various research projects, creating pages that link school and community websites and electronic projects with other schools. One of the district's goals was to promote community involvement and these projects definitely help them to meet this goal.

Through the use of technology both in and out of school on this project the students “develop skills that are critical to their success in their future education and the workplace” (Monahan & Tomko, 1996). Not only do student learn the different software that they are using to create such projects, they are also developing their research skills, increasing writing ability, as well as, learning to work as a team and how to make decisions as a group.

Currently there are many resources out there that provide teachers with tools on how they create their own web pages. Some of the ways that are being used are various commercial

## Website Qualities, Benefits and Requirements

software like Microsoft's Front Page or Macromedia Dreamweaver, using free online shareware software such as HTML Assistant Pro, online services from companies like AOL, or even programming in HTML. Creating the page is easy; however it takes vision, creativity and diligence.

Since the mid 1990's the number of school and library websites represented on the web have increased. Articles like Dr. Rob Reilly's "Your School Wants a Web Page – Plan Carefully," assist schools on how to create a web page, and also in determining the content of the page. The article asks important questions that a school must ask itself prior to creating a school webpage: What is the purpose of the website? Who will host it and where? Is the Website passive or dynamic? Who will be the Webmaster and how many do you need? What will the use policy be, and what kinds of content will be on the web page? (Reilly, 2003)

Determining the purpose of the website is essential prior to its creation, but is also a good thing to keep in mind while maintaining the site. It helps to keep the content of the site in line with your ultimate goal. In Reilly's article we are reminded that website maintenance can be a huge time constraint, as well as, a large financial drain. Depending on the type of content, either passive or dynamic, time spent on maintaining a school's site can vary dramatically. The time and skills needed to maintain a site, falls on the shoulders of the school's webmaster. The webmaster may also be responsible for other non-website issues such as Professional Development and Curriculum Integration. And for some schools, this may be a full-time position.

"A school web site is a virtual community that connects your school to the outside world." (Schmidt, 2000, p. 5) A school's website is a way to open up the lines of communication between teachers and students, parents and teachers, and parents and students.

## Website Qualities, Benefits and Requirements

Putting a school online creates a virtual community where parents, teacher and students can build and enhance relationships in an effort to increase student motivation and academic achievement.

Mary Schmidt's article, "Setting up the School Web Site" describes a wide variety of ideas of content that can, and should be included on School Websites. According to Schmidt, school sites should include a range of student work including multimedia projects. A school website is also the place that parents can go to for community information such as PTA meeting, teacher profiles, lunch menus and school events. School websites are also the perfect forum for link to educational websites that are related to the curriculum of that particular school.

## Benefits of Web Resources

Taking into consideration the rate that technology is infused today's schools, it is no surprise that the schools of our near future will no longer resemble schools as we know them today. Technology is growing and changing the way that we educate our students. Online educational web resources are an increasingly large part of a student's academic career. The National Clearinghouse for Educational Facilities (2005) published an article which highlights the educational trends that shape school planning and design for 2007. In this article, Stevenson states that, "With the rapid development of technology and the increasing lack of confidence parents having in public education, the disappearance of the brick-and-mortar structure called school is not implausible." Focusing on e-learning will not only cut down operational cost of running schools it can also help to lower teacher-pupil ratios (Stevenson, 2006). In order to prepare for this level of e-learning, schools must make it a priority to educate their teachers on various new technologies through Professional Development and support teachers in their development of their technological skills. Schools need to change the culture of the school

## Website Qualities, Benefits and Requirements

environment to focus on technology and what better place to start than the school website. The school's website is essential in creating a central location for all the school's resources.

The Internet provides learning opportunities and resources for students of all academic levels, as well as for students with Learning Disabilities. WebQuests, just one type of resources, provide teachers with the opportunity for differentiated instruction, but where do teachers go to find resources for students with special needs? Students with disabilities, their teachers and their parents may not know how to what resources are available to assist them with their learning disability. School websites have the opportunity to host an array of resources for students, teachers and parents. Online databases, such as Closing the Gap's Solution and Georgia Tech's Center for Assistive Technology and Environmental Access, are updated as often as once a week and host thousands of resources (Thormann, 2004). Visitors to these sites can search these thousands of resources by keywords, hardware/software, product type and/or learning disability. In addition to online databases, a school website may choose to provide these individuals with links to various Assistive Technology Centers. The Rehabilitation Engineering & Assistive Technology Society of North America and the Alliance for Technology Access are both comprised of lists of Centers around the country where students and their families can go for assistance when attempting to use technology to aide in their educational experience (Thormann, 2004). Resources such as academic journals and websites for family support provide assistance for families to help students with special needs to thrive in their classrooms and in life.

## Parental Involvement

By broadening the definition of parental involvement, educators acknowledge the value of parental guidance and participation in student learning (Long, 2007). Parental involvement in

## Website Qualities, Benefits and Requirements

education has received much attention in recent decades as various school-improvement efforts have sought to enhance student learning (Hoover-Dempsey et al, 2001). In order to promote active parenting current measures in education call for open communication between the school and the parent. In general, parents and children at the primary and intermediate elementary grade levels appear to agree that parental help is an inherent component of the homework process. Parental involvement was and is a product of assigned work and parental time to assist in the process. Research in 2000 conducted by Walker, Hoover-Dempsey, Reed, and Jones suggested that “the parents of these fourth grade students were motivated toward involvement in homework because of the children’s lower grades, greater experience of difficulty with work, and children’s own perceptions of poor performance”.

### Motivations for Involvement

The relationship between the teacher and parent is just as important of the relationship between the student and teacher. High efficacy teachers are more secure in and confident of their own roles in children’s learning and will tend to invite (explicitly and implicitly) more frequent and significant parental involvement because they have an understanding of parental comments rather than low efficacy teachers who will hear things as criticism and threats (Hoover- Dempsey, Bassler and Brissie, 1992). Consistent with role theory, several investigators have reported parents’ beliefs that involvement in children’s schooling is a normal requirement and responsibility of parenting (Hoover-Dempsey et al, 2001). The role all parents play whether in doing so positively or negatively in the learning process is as the modeler.

Parents’ homework involvement activities give children multiple opportunities to observe and learn from their parents’ modeling (of attitudes, knowledge, and skills pertinent to learning), to receive reinforcement and feedback on personal performance and capability, and to engage in instructional interactions related to homework content and learning

## Website Qualities, Benefits and Requirements

processes (Hoover-Dempsey et al, 2001)

How do schools attempt to increase parental involvement?

The goal is the same for parents as it is for us as educators, “every single parent wants their child to succeed, go to college” (Long, 2007). General invitations from the school influence parents’ understanding of teachers’ interest in their help, parents’ beliefs about being needed in the educational process and parents’ knowledge of their children’s work (Hoover-Dempsey, Jones, Reed, and Walker, 2000). Parents appear to involve themselves in homework because they perceive invitations from their child or child’s teachers suggesting that their homework involvement is wanted or expected (Hoover-Dempsey et al, 2001). Parents can become a valuable resource not only for students but teachers, as well, because when a parent can find value in their participation they will tend to continue to do so.

Schools may take specific steps to enhance each of the motivations. For example, they may communicate directly to and specifically why and how involvement is important to children’s learning; they may offer suggestions for involvement that support parental assumptions that they do indeed have a role to play in their children’s success and that their activities make a difference (Hoover-Dempsey et al, 2001).

Parental involvement can and is affected by social economic status and ethnicity.

Families need to be communicated to and invited to participate through the use of education programs. In order for high 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 school (Hartshorne, Friedman, Algozzone & Isibor, 2006).

Atlanta-based program ehomeroom.com was developed originally as a communication tool to close the gap between K-12 teachers, parents and students at schools across the country with its

## Website Qualities, Benefits and Requirements

unique calendaring system (T H E Journal, 2000). In support of increasing communication between parents and teachers while elevating some of the paperwork eHomeroom.com allows schools to post academic, extra curricular and sports activity schedules.

School websites and e-mail are an excellent way to communicate with parents and teachers regarding curriculum, events and various homework assignments. But some schools are taking it one step further. Some schools, such as Westside Community Schools in Omaha, Nebraska, are using web-based SIS (Student Information Systems) like Apple's PowerSchool. Programs such as these offer access to parents to their child's attendance, grades, and evaluations. The Internet has opened the lines of communication for parents to access this information from just about anywhere. Using an SIS program, for example PowerSchool, parents can track their child's progress and maintain their parental involvement, as well as, schedule timely parent-teacher meetings.

One point that Ken Bird makes in his article, "How Do You Spell Parental Involvement? S-I-S" is that according to the No Child Left Behind Act that all parents have the right to information about the curriculum and content that is being taught in their child's classroom. This is one way for parents to do this, even on a daily basis. In the Westside Community high school, 98 percent of the students/parents logged on. The Westside Community Schools were not the only schools that saw the benefits of PowerSchool. In a lower socio-economic school in Somerton School District, Arizona, approximately 50 percent of student/parents logged on. And...parents aren't the only ones showing positive responses, students find S-I-S programs an excellent tool to help them with organization. S-I-S systems have been implemented in 7,000 school districts around the country and are receiving positive responses from parents, teachers and students (Bird, 2006).

## Website Qualities, Benefits and Requirements

### Technology and Parental Involvement

With the hectic schedules that face parents and families in today's society, when trying to balance work, home and family obligations, today's parents may not feel that they have the time to maintain the level of parent involvement at their child's school that they wish. According to Hoover Dempsey et All 2000, there are five levels of Parental Involvement: family obligation, involvement at school, home education, decision-making and advocacy at school, and community collaboration. All sorts of logistical issues can seem to prevent a parent from participating at their child's school, maybe a parent does not enough time or maybe other obligations stop them. Technology can facilitate parents getting involved in a child's education. A school's website can serve as a resource for parents who wish to be more involved in their student's school. A schools site can encourage family participation on their site by including Internet activities, for instance, virtual field trips, technology-related tutorials, research project guidelines, online homework help sites, and parent support sites (Farmer, 2002).

Although technology can be of assistance to parents, it also can be a hindrance to parents who are not comfortable with technology. For those parents, schools should provide parents with tutorials on how and where to access the online resources. Some schools librarians provide technology training for parents either online or on a one-to-one basis. This is essential for parents who need assistance in using technology, in order for them to reap the benefits of using technology as a way to connect to their children and their children's school.

“Many schools are turning to technology to help with this type of communication, with the idea that improved communication is the key to successful parental involvement in schools.” In addition, increased parental involvement “leads to higher student achievement” and allows for students “to place greater importance on their education when they see their parents actively

## Website Qualities, Benefits and Requirements

involved in it” (Center on Families 1995a, 1995b). Websites such as Family Education Network are developed with the intention to provide parents direct, interactive access to their children’s schools and teachers, as well as a wealth of educational resources and parenting information (THE Journal, 1998).

“Being aware of our student’s lives, our communication with their families will improve. With the improvement of communication may come more parental involvement, which in turn paves the way for higher achievement among our students” (Ramirez, 2001, p. 31). Although using technology is an effective way to increase communication with parents, teachers should never assume that every family in their class has access to technology. Teachers should survey the class early on in the school year and offer training session to families. Teachers can also use online survey to get feedback from the parents.

According to an article by Bessell, Lee & Schumm, white middle class families are responsible for the highest amount of Parental Involvement. In this particular study, the Citicorp Foundation partnered with a program called FamilyTech, in order to provide technology support and training for students, teachers and parents throughout South Florida. The South Florida Annenberg Challenge is one part of the Annenberg Foundation who altogether spent \$500 million dollars on similar initiatives. This particular study focused on 10 public elementary schools in three school districts in South Florida: Broward, Miami-Dade and Palm Beach. The schools and classrooms were chosen based on their minority status and classroom teacher’s willingness to participate in this two-year study.

Teachers were required to teach the same group of students for two years. Students were given a refurbished computer to take home so that teachers may better incorporate technology into their classrooms. “By putting computers in the hands of students and in the homes of their

## Website Qualities, Benefits and Requirements

families, we learned valuable lessons about gaining parental participation that have applications for educators and researchers nationwide.” In addition to the refurbished computers, FamilyTech provided these 10 schools with training for teachers and workshops for student’s families.

Technology is a part of everyone’s daily lives. It is important to educate students using technology so that they can find a comfort level with it. The training provided by Family Tech help not only helped teachers and parents find this comfort level, it also helped to learn new skills, keep up to date with today’s students, and give them more confident and self-esteem.

But, do how do we ensure that all students and their families have access to these resources when they are not at school. This gap between individuals who use and have access to technology and its resources is commonly called the Digital Divide. According the Pew Internet and American Life Project, “at the end of March 2006, 42% of Americans had a high-speed Internet connection at home, up from 30% in March 2005” (Tucker, 2007, p. 16). Almost half of all American homes not only have Internet access, but have a high speed Internet connection. And, this increase is not only happening in the homes of the students that come from a higher level socioeconomic background. “Americans whole household incomes were between \$40,000 and \$50,000 saw the fastest adoption of high-speed Internet capabilities, up by 68% between 2005 and 2006” (Tucker, 2007, p. 16). Technology is becoming a necessary aspect of American life, as well as, in its educational system. The U.S. Department of Education states that “only 37% of students from families with incomes below \$20,000 are able to use a computer at home, while 88% of students from families with incomes beyond \$75,000 have regular web access outside of the classroom” (Tucker, 2007, p. 16). When considering the importance of the use of technology in conjunction with Parental Involvement, it is equally important to take into account the digital divide and the impact that it has on low income American families.

## Methodology

### Study Purpose:

The digital divide holds with it a social justice goal to ensure that students regardless of socioeconomic status have equal access to new technologies both in the form of information and communication. The No Child Left Behind Act Of 2001, the Enhanced Education Through Technology program identifies among its purpose “to support local efforts using technology to promote parent and family involvement in education and communication among students, parents, teachers, principals, and administrators” (<http://www.ed.gov/index.jhtml>). The purpose of this study is to examine school district websites and online resources and identify differences between website quality based on instruments developed to assess website quality. The quality of the school districts will be examined and compared to websites within the same socio economic category and with websites of school districts in the other categories.

### Rationale:

“The nation’s continued investment in school-based technology has resulted in significant progress toward closing the digital divide” (Judge, Pucket & Bell, 2006). This research study is a examination of Long Island School District’s websites as a resource that can range from a basic general contact information to an elaborate display of educational resources forming a link between the schools, parents and the community at large. Our literature review consists of previous research that analyzes school-based websites, determines qualities of “good websites” and identifies school website evaluation tools, including CVS (Content Validity Scale), WebMAC (Websites Analysis Checklist Professional) and Bobby. Our review looks will look at websites being a gateway to parental involvement as the use of quality website can provide helpful resources for parents, information on school events and a place for parents to view student progress and work.

### Sample:

The sample for this study will be selected from the 127 school districts that make up Long Island’s public schools. Full lists of Nassau and Suffolk county schools were retrieved from the Long Island Schools website. The schools were grouped first by geographic location (Nassau or Suffolk County), then grouped by average family income to determine Social Economic Status. Our study will include a stratified random sample from each of the four socio-economic levels until the number of desired districts from each socio-economic level is chosen. The levels of socio-economic status will be grouped into the following levels based on the 2000 Demographic Data accessed from National Center for Education Statistics (<http://nces.ed.gov/>)

Below is a graphical representation of the demographics indented 2000 Demographic Data accessed from National Center for Education Statistics (<http://nces.ed.gov/>)

Socio-Economic Levels	Average Family Income	Number of School Districts	
		Nassau	Suffolk
Lower Class	Less than 54,999	3	16
Lower Middle Class	55,000-67,499	18	30
Upper Middle Class	67,500-79,999	17	14

## Website Qualities, Benefits and Requirements

Upper Class	Greater than 80,000	18	9
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This research will examine 50 school websites from the following distribution:

- 10 Districts from Lower Class (below 55k),
- 15 Districts from Lower Middle Class (55k-67.499K),
- 15 Districts from Upper Middle Class (67.5-79,999k)
- 10 Districts from Upper Class (greater then 80k)

This sample represents 40% of the total school district population in the two counties.

### **Methodology:**

We will be examining 50 school district websites in Nassau and Suffolk counties on Long Island, New York. This study will be an exploratory case study in which Quantitative data will be collected from which we will provide Qualitative analysis from the examination of the 50 school district websites from the four levels of Socioeconomic Levels in the Long Island landscape.

After the 50 sites are randomly selected, they will be reviewed independently by both researchers. Each of the two researchers will review the same 50 school districts, using the two attached instruments, and the data will be cross-referenced. Research will be compared and only websites for which there is a 90% agreement on the criteria between researchers will be included in the analysis.

### **Instruments:**

Our first instrument (Appendix A) was developed from the review of previously published literature on the topic of quality school websites. The instrument consists of 17 Common Components in school websites. The instrument is adapted from Miller, S., Adsit, K., & Miller, T. article's *Evaluating the Importance of Common Components in School-Based Websites: Frequency of Appearance and Stakeholders*'. We will first examine each of the fifty websites for common components based upon the article's suggestion which states an effective school based website should consist of a minimum of ten of the components.

Our second instrument (Appendix B) is tool developed by two professional educators whose goal is aligned with our research. This instrument assesses website quality to determine if the website provides useful information for classroom use, or student and parent use at home. Permission has been granted to use WebMAC Professional through a personal correspondence with Ruth Small and Marilyn Arnone on December 5, 2007.\* The tool will serve as an instrument in our evaluation of the public school district web pages on Long Island. Within this instrument we as the researchers will interpret question number 24 by searching for the presence of links to individual teacher webpages.

## Website Qualities, Benefits and Requirements

### Findings

The nation's continued investment in school-based technology has resulted in significant progress toward closing the digital divide (Judge, Puckett, & Bell, 2006). The findings suggest the importance of attending to personal, as well as, contextual motivators of parental engagement in their children's education as researchers and educators work to understand and enhance the effectiveness of parent-school relationships (Hoover-Dempsey, Jones, Reed, and Walker, 2000). These articles strongly suggest that open communication between the schoolteacher and parent will directly affect a parent's participation in the educational process. While the vast amount of high schools appropriately addressed web design issues, other features, such as illustration of student work, accessibility, testing information, and parent-teacher communication needed to be improved (Hartshorne, Friedman, Algozzone & Isibor, 2006). Teachers should find ways to extend invitations to parents for participation, and to provide parents information on course work and materials. These findings hold implications for parents, teachers, principals, and policy makers interested in strengthening family-school partnerships and their influence on children's educational outcomes (Hoover-Dempsey, Jones, Reed, and Walker, 2000).

### Conclusion

There is a need for the creation of a consistent template for school web site development or at least an agreed upon list of common components for school district web sites. There is no surprise that across the socioeconomic landscape some schools of greater or more valuable resources than others. These resources can include many variables such as technologies, experience and staffing but never the less all school districts at this point need to have a media

## Website Qualities, Benefits and Requirements

outlet for communication of events, school happenings and students work. This research supports the ideas presented by Bellingham Schools in 1996 that a good school web site should do at least the three things: point internal users to good outside informational resources, point external and internal visitors to good internal curriculum resources and introduce external visitors to the school.

Further more in order to have teachers build a classroom websites they must be provided with the opportunity to learn how to develop proper and useful sites. This requires the school districts to provide in-service teacher training. Teacher training occurs with a hitch however because most teacher schedules are fixed and full. From classroom prep time to assessment and lesson reflections a teacher will note there is little time to learn a new skill. Teachers both experienced and novice, often complain that learning experiences outside the classroom are too removed from the day-to-day work of teaching to have a meaningful impact (Putnam & Barko, 2000). A classroom website where parents and students can find academic calendars and helpful links is a direct reflection of the day-to day operations of a classroom. It also can provide a valuable connection between students and their families and community through the display of student academic as well as community work.

“One approach to staff development is to ground teachers’ learning experiences in their own practice by conducting activities at school sites, with a large component taking place in individual teachers’ classrooms”(Putnam & Barko, 2000). This particular approach is probably the best way for administration to help and support teachers in building meaningful classroom web pages. In order for a teacher to learn all of the publication and processes for building a web page one on one instruction would be of great value.

## Website Qualities, Benefits and Requirements

One issue is that of scalability: having staff developers spend significant amounts of time working alongside teachers is not practical on a wide-spread basis at least not given the current social and economic structure of our schools (Putnam & Barko, 2000). When teachers are provided support and observations throughout the school year. This particular model would not work for technology teacher development. Teachers would need to have staff development during Superintendent Conference days in an actual computer lab where a technology specialist can go over the process, provide step-by-step instructions, and then follow up during the school year with each individual teacher as needed. Not all teachers need extensive instruction on learning this skill but all must be provided the information for reference and given the district website design guidelines.

“Technology training helps teachers make technology become a seamless part of the curriculum.” (Clapp, 2005, p. 28) Clapp states that the most important thing to remember when preparing to conduct a technology training at your school is to conduct a survey of your teachers to find out their areas of strengths and weaknesses. Technology trainings are an excellent way to provide teachers with the confidence to incorporate technology into their classrooms. Areas of training can include anything from graphic organizing software, to presentation software to video and sound production software. Some teachers may also be interested in learning about databases, spreadsheets, and word processing software.

## Future Studies

Among the reasons for development of valuable school/classroom websites this literature review determined that it can be a motivating factor for better student products. Further research should include use of websites for publication of student work as motivating for students and a factor in student achievement.

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## Website Qualities, Benefits and Requirements

Table 1  
Characteristics Studies Included in Review

Authors	Purpose	Linking Quote/ Summary
Anderson, K., & Minke, K. (2007, May)	Parent Involvement	The article explains that there is a diversity of efforts put forth by parents in their process of involving themselves in their child’s school work. “The very diversity of these efforts appears related in part to variations in the skills, commitments, and family situations that individual parents bring to the homework process”
Bellingham Public Schools (1996).	Designing School Homepages	The article outlined several important topics for teachers and educators in the development of websites. “Most schools and districts offer little more on their web site than photographs of the school, a list of staff and a few student works”.
Bessell, A., Sinagub, Lee, O., & Schumm, J. (2003)	Parental Involvement	This article described the direct benefits of engaging families with Technology using the example of South Florida’s FamilyTech program. “By putting computers in the hands of students an in the homes of their families, we learned valuable lessons about gaining parental participation that have applications for educators and researchers nationwide.
Bird, K. (2006).	Parental Involvement	Student Information Systems are being used in over 7,000 school districts around the country. They help parents and children track attendance, grades, evaluations and general activities. “The use of technology, especially a Web-based system, can make increased parental involvement a more comfortable, favorable development for all involved.
Bray, M., Flowers, C., Smith, S. Algozzine, R. (2003)	School Websites	This aritcle researches the accessibility of elementary school websites for all students. Since many elementary school use the world wide web to disseminate gather information attention must be paid to the district/school webpages accessibility for all types of users particularly those with disabilities.
Chrispeels, J., & Gonzalez, M. (2004)	Parental Invovlement	“Research has found that cultural and socioeconomic factors

## Website Qualities, Benefits and Requirements

		strongly influence immigrant families' role construct or perceptions about parental involvement". "The study shows that a parent education program can have a significant effect on motivators of parental involvement at both the elementary and secondary school levels by increasing parents knowledge on how to be involved"
Clapp, D. (2005)	Professional Development	This article gives an overview of the various areas in which technology training can help teachers better use technology in their classroom. "Teachers want and need tech-training workshops to expand the good work they are currently doing in their classes.
Clyde, A. (2000)	School Websites	School library websites can provide resources for parents, students and teachers. The author is in the process of carrying out a "longitudinal research study that is investigating the content, purposes, and the users of school library web sites, with the aim of not only describing the state of the art and changes over time, but also of developing quality indicators for school library web sites."
Education, U. S. D. (2005)	Computer Technology	This particular article was chosen to review because it not only identifies data on teachers opinions on technology resources it sets the table for professional development element in our research project.
Farmer, L. S. J. (2002)	Parental Involvement	This article details the different levels of parental involvement and how technology can be an effective tool in increasing the level of parental involvement. "Parental involvement in 21 <sup>st</sup> century education is more important than ever. Technology can feel daunting, separating parents from their children even more than they already may be. However, it can also be a vehicle to bridge generations through interdependence."
Furner, P. D. J., & Daigle, D. (2004).	Educational Websites	This article hopes to help provide teachers with the tools that they need to effectively select computer software and websites. "The Software/website must be easy to implement, instructionally sound, cost-effective, and effective in its approach to teaching."
Grimes, R., & Smith, S. (2004).	Professional Development	A study of 5,400 students in five elementary schools in Indianapolis, Indiana set out to find the "impact of focused standards-based professional development, including the use and implementation so ISTE's National Educational Technology Standards in the classroom, as well as the need for data-based decision-making when providing district technology professional development."

## Website Qualities, Benefits and Requirements

Harthorne, R., Friedman, A., Algozzine, B., & Isibor, T. (2006)	School Websites	The development of web pages by teachers can take on many different roles from supplementing the curriculum, to sharing information and motivating students. In the Spring 2006 issues of American Secondary Education there is an article that “evaluated the extent to which high schools’ web sites reflect the overarching goals of high schools and how well they meet criteria for effectiveness”
Hew, K. & Hara, N.	Professional development	
Hoover-Dempsey, K., Bassler, O., & Brissie, J. (1992).	Parental Involvement	This article introduces the template for parental involvement model. An examination of the relationship between parental self efficacy and helping their children with school work. The Hoover-Dempsey model is the guideline pre-service teachers are taught how to understand parental involvement from.
Hoover-Dempsey, K., Battiato, A., Walker, J., Reed, R., DeJong, J., & Jones, K. (2001)	Parental Involvement	The article explains that there is a diversity of efforts put forth by parents in their process of involving themselves in their child’s school work. “The very diversity of these efforts appears related in part to variations in the skills, commitments, and family situations that individual parents bring to the homework process”
Hoover-Dempsey, K., Jones, K.P., Reed, R., and Walker, J. (2000)	Parental Involvement	“This work suggests that general invitations from the school influence parents’ understanding of teachers’ interest in their help, parents’ beliefs about being needed in the educational process and parents’ knowledge of their children’s’ work”
Ivers, K. S., & Barron, A. E. (1999).	School Web pages	This article describes a study that examines the content, design and purposes of existing elementary school web pages. At the time the article was written in 1999, “few educators take advantage of their school’s web presence for increasing students’ communication skills, motivation toward writing, organizing and synthesizing skills, cultural understanding and authentic learning experiences.
Judge, S., Puckett, K. & Bell, S. M. (2006)	Digital Divide	This article focuses on strategies on how to close the digital divide. “The nation’s continued investment in school-based technology has resulted in significant progress toward closing the digital divide.”
Koehler, L.	Web Resources	This article describes the top 50 essential web sites for teachers of

## Website Qualities, Benefits and Requirements

		students with mild or moderate disabilities. “The websites cover the topics of academic supports; advocacy and family supports; professional organizations; social, emotional, and behavioral supports; technology; and transition support.
Long, C. (2007)	Parental Involvement	Long investigates the lives and participation of four women in their child’s schooling trying to identify the keys reasons why they do or do not participate in the education process. The end goal of the article was to explain to educators some challenges facing families that effect involvement. The article determines that “by broadening the definition of parental involvement, educators acknowledge the value of parental guidance and participation in student learning”(Long, 2007).
Martland, N. & Rothbaum, F. (2006)	Digital Divide	“While the availability of huge quantities of online information has many positive aspects, there is a serious risk of exposure to erroneous, potentially harmful information.”
McKenney, S. (2005)	Professional Development	“Teacher professional development is considered important for a host of reasons, ranging from certification broadening the teaching repertoire to improving pupil achievement”. The article uses as it bases the computer program called CASCADE-SEA (Computer Assisted Curriculum Analysis, Design, and Evaluation for Science Education in Africa).
Miller, S., Adsit, K., & Miller, T. (2005)	School Websites	The only other items that could be found in the majority of the school web pages was the school’s mission statement and useful educational links. In the conclusion of this research it is stated that “only eight of the 70 schools included in the study incorporated more than 50% of the recommended features in their site”
Monahan, B., & Tomko, S. (1996)	School Websites	“Creating an effective Web page takes creativity, imagination, and attention to detail.” The authors of this article wish to provide teachers with different resources that can be used to create their own school web pages.”
Putnam, R., & Borko, H. (2000)	Professional Development	The field of education shifts into a technology rich constructivist learning environment the attitudes and knowledge of the teachers needs to evolve. “Less attention has been paid to teachers-

## Website Qualities, Benefits and Requirements

		either to their roles in creating learning experiences consistent with the reform agenda or how they themselves learn new ways of teaching”.
Ramirez, F. (2001)	Parental Involvement	This article states that “increased parental involvement leads to higher student achievement.” One way to open the lines of communication between students, school and parents is the use of technology, through email, technology training and parent surveys.
Reilly, R. E. D. (2003)	School Web pages	This article gives tips for schools prior to creating their school web page. Things to consider when planning a school web sites are “what is the purpose of the web site? Who will host it and where? Is the web site passive or dynamic? Who will be the webmaster? What will the use policy be, and what kinds f content will be on the web pages?”
Reid, K. (2001)	Technology	A discussion of how minority and poor students are not only limited in knowledge but also access to technology such as the Internet and computers.
Riccardi, M., Easton, D., & Small, R. (2004)	Web site evaluation	This article attempts to demonstrate to teachers how important it is to critically evaluate your school website. Two tool that is used in this particular research is the Content Validity Scale and the Website Motivational Analysis Checklist. “A web site with high motivational quality contains those features that motivate learners to visit, explore and return to a web site.”
Schmidt, M. (2000)	School Websites	School websites “can open up connections between your teachers and students, your parents with the school and even with the world.” The article lists ideas for the content of school websites including, for example, student projects and educational links.
Schweizer, H., & Kossow, B.	Web Resources	WebQuest are one type of resource that teachers can use to incorporate technology into the existing curriculum of their class. WebQuests “use Internet-based resources to deepen their understanding and stretch their thinking around just about any topic imaginable.
Shaw, T. (2002).	School Websites	This article discusses how “the mission of the school’s site should reflect the mission of the school.” In addition, the article goes into the Webmaster as the coordinator of the schools website.
Shields, C. (2003)	Professional Development	Discussion of computers in schools teaching teachers how to use

## Website Qualities, Benefits and Requirements

		technology across the curriculum. “Younger teachers have been trained in college how to use computers. For them, computers are as much a part of the educational furniture as desks and chairs”.
Stevenson, K. R.	Web Resources	This article discusses the upcoming trends that shape the planning and design of schools in 2007, three of which focus on technology. According to the article, “teacher preparation and staff development for the effective use of technology will be become top priority,” “students who are visual learners would attend schools designed to support visual media” and “paper-based learning materials may largely disappear from the classroom.”
T. H. E. Journal (1998)	School Websites	An introduction to the Family Education network as a way to provide parents with direct, interactive access to their children’s school and teachers as well as a wealth of educational and parenting resources.
T. H. E. Journal (2000)	Website development	The article is a case study of at Walton High School in Marietta Georgia that applies the Atlanta based program ehomeroom.com as a communication tool. “eHomerom.com is closing the gap between k-12 teachers, parents and students at school across the country with its unique calendaring system”
Thormann, J. (2004)	Web Resources	“A student with a learning disability may be challenged in terms of learning strategies, and perhaps confronted with barriers in learning academic skills.” The article provides readers with online resources for students with learning disabilities.
Tucker, P. (2007)	Digital Divide	This article highlights current statistics of Internet use across the Country, for example, “At the end of March 2006, 42% of Americans had a high-speed Internet connection at home, up from 30% in March 2005.
Uzunboylu, H. (2007)	Professional Development	The purpose of the study was that it sought to ascertain teacher attitudes toward online learning after partaking in an in-service training session on distance learning.
Walker, J., Hoover-Dempsey, K., Reed, R. & Jones, K. (2000)	Parental Involvement	Walker et al. cites that there is a multitude of valued research stating that children generally invite parent to partake in their educational experience for four general reasons. “Aspects of parents’ decisions about involvement in the child’s educations- include general academic

## Website Qualities, Benefits and Requirements

		performance level, the child's experience of difficulty with day to day school work, the child's press for independence, and the child's valuing of parental help"
Washenberger, M. (2001)	School Websites	Building a website is necessary "because the internet is a powerful communication tool for teachers, students, parents and community, it makes sense to develop a website that provides information about what is going on in school". When developing a webpage the first and most important step is to decide what to include.
Wells, J. A., & Barron, A. E. (2006)	School Websites	"Several online tools can be used to evaluate the accessibility of web pages, including WebXACT and the Accessibility tool Bar". This research was different than to most previous studies that used only the accessibility tool Bobby , this study used WebXACT.
Williams, M. D. & Loh, C. S.	Web Resources	"There is a need for educators to understand how Web sites can be designed to attract learners, to hold their interest long enough to explore the sites, and to motivate them to return." In this resource study, the researches used two tools to evaluate sites in the categories of engaging, meaningful, organized, enjoyable, overall perceptions. WebMAC was one tool and the other tool developed was M@RK, the Motivational Analysis Rating Kit.