



# An Exploratory Case Study: What Makes a Good School Website: Investigation of Long Island School District Website Homepages Across Socioeconomic Status

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**Contents**

Abstract:.....	3
Introduction: .....	4
School Based Websites.....	5
Qualities of a “Good” website .....	6
School Website Evaluation Tools.....	11
Creating Your Own School Website .....	15
Benefits of Web Resources.....	17
Parental Involvement.....	19
Motivations for Involvement.....	19
How do schools attempt to increase parental involvement?.....	20
Findings .....	27
Discussion.....	41
Conclusion.....	43
Future Studies.....	443

### 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 was 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 was selected from the 127 school districts that make up Long Island's public schools. We examined 50 school district websites in Nassau and Suffolk counties on Long Island, New York.

This study is an exploratory case study in which qualitative and quantitative data was collected from the examination of the 50 school district websites. The school districts were divided into four socioeconomic levels (lower class, lower middle case, upper middle class and upper class) in the Long Island landscape. As educators we know that learning occurs beyond the walls of our classroom and the development of a quality website can enrich all students' learning opportunities by providing helpful resources for parents, information on school events and a place for parents to view student progress and work. Review of the data gathered from the instruments we used has shown that regardless of socio-economic status websites fail to provide such useful resources as homework hotlines for students, classroom level informational pages, an explanation of the district Internet Safe Usage policy and many district fail to promote student success by displaying the student work. While reviewing the data we have also identified that the most common component was all but one district identified the physical location of the schools within the district.

## Introduction

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 (<http://www.nysed.gov/>). 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 p.55). 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 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 Appendix A, we identify key characteristics of 44 articles of the more than eighty articles reviewed as part of this literature review research. The characteristics include the author, date, purpose and linking quote or summary.

### Review of Literature

#### *School Based Websites*

Why have school district websites? 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 (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 p.2).

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 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 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 school are now using Flash and Shockwave animation, as well as, Grade 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 school’s 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 verses 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. 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, 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 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*

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 any of three particular evaluation tools can be used to measure the quality and efficiency of the site. These reliable evaluation tools are as follows: the Content Validity Scale (CVS), the Websites Motivational Analysis Checklist Professional (WebMAC), Bobby. 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). For this research we have applied for and been granted the permission of Ruth Small and

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 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 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 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 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 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 a School District 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 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 itself 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 constrain, 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). School websites are a way to open up the lines of communication between teachers and students, parents and teachers, and parents and students. 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 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 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 district, teacher and parent is just as important as 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 processes (Hoover-Dempsey et al, 2001)

### *Current attempts 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 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, extracurricular 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 all parents have the right to information about the curriculum and content that is being taught in their child's classroom". The development of through district and school websites is one way for parents to gain access to their child's classroom on a daily basis. In the Westside Community high school, 98 percent of the students/parents logged on to the internet to view school and classroom happenings. 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. Bird notes “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).

### *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 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 families, we learned valuable lessons about gaining parental participation that have applications for educators and researchers nationwide." (Tucker, 2007, p. 16). 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, 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.

#### Research 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 in website quality based on instruments developed to access 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.

#### Research 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 research 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.

### Research Population Sample

The sample for this study was selected from the total of 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. A total of 50 school were randomly sampled from each of the four socio-economic levels until the desired number of districts from each are chosen. The school websites were selected by a systematic random sampling. The levels of socio-economic status will be grouped into the following levels based on the US Census Bureau:

Table 1

Socio-economic status level boundaries.

Class	Boundaries	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
Upper Class	Greater than 80,000	18	9

This sample study model would be a purposive sampling to review 50 school districts in Suffolk County and Nassau County. This research will judge the 50 customized school district websites for content, and presentation in the forms of stimulating, meaningful, organization and ease of use characteristic across the economically diverse Long Island educational landscape.

Table 2

Research participation guidelines.

Socioeconomic Level	Annual Average Family Income Level	Number of District Websites Evaluated
Lower Class	Below \$55k	10 Districts
Lower Middle Class	\$55k-67.49k	15 Districts
Upper Middle Class	\$67.5k-79.9k	15 Districts
Upper Class	Greater than \$80k	10 Districts

#### Research Instrument Validation

During the research phase each researcher individually applied the two instruments to the 50 websites that they identified by only a number. The development of the number was done by placing each of the school districts into a Microsoft Excel Spread sheet by name, socio-economic status and website URL. The status column was then removed and the districts were sorted by alphabetical order. Following the sort each school was given a number start at 1 for the first school district name in the alphabet proceeding to 50 with the last district in the alphabet. As the researchers we then at different locations investigated the 50 websites, upon completion of the evaluations we caucused to compare our findings.

In order to validate the first instrument we decided those questions where we comparatively viewed a difference greater than 20% would be reviewed by both researchers together to determine if our findings were in error. The mathematical result for comparison validation for the first instrument is 20 % of 17 questions. The overall resultant for instrument one can be viewed in Appendix 2. This meant if we had three or more disagreements on the websites contents we would revisit that district website together to review our results. Our second instrument WebMAC Professional (Appendix 3) was abstract but provided a great deal of data thus consisted of a more involved formula for validation. There were a total of 32 questions each worth a possible three points, of which formed two distinct dimensions including summary

motivation for both Value (V) and Expectation for Success (XS), this instrument provided for internal consistency. The summary motivation value (V) included both the ideas that the website contained meaningful information and that the information was presented in a stimulating way. The summary motivation Expectation for Success called for the identification of the organization and ease of use of the district websites. The mathematical result for comparison validation for the second instrument was agreed upon to be 10 % of total number of questions. This meant if we had more than five differences in grading across the 50 websites those questions were removed from our research. This form of validation was instituted in order to protect against instrumental threat to validity and only resulted in the removal of five of 32 questions.

### 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 interesting in strengthening family-school partnerships and their influence on children’s educational outcomes (Hoover-Dempsey, Jones, Reed, and Walker, 2000).

Table 3

Percentage of research population having standard policy information

Item	Lower Class	Lower Middle Class	Upper Middle Class	Upper Class
Mission Statement	70%	67%	60%	70%
Rules & Policies	50%	53%	40%	50%
Internet Use Policy	20%	33%	33%	50%

The results include some startling information regarding school district homepage contents. Table 3 identifies the percentage of schools within the same socio-economic status that have the minimal policy information available to it users. These policies include the districts mission statement, rules and regulations and the district’s internet safe usage policy. The data shows that many districts fail to have these three basic components.

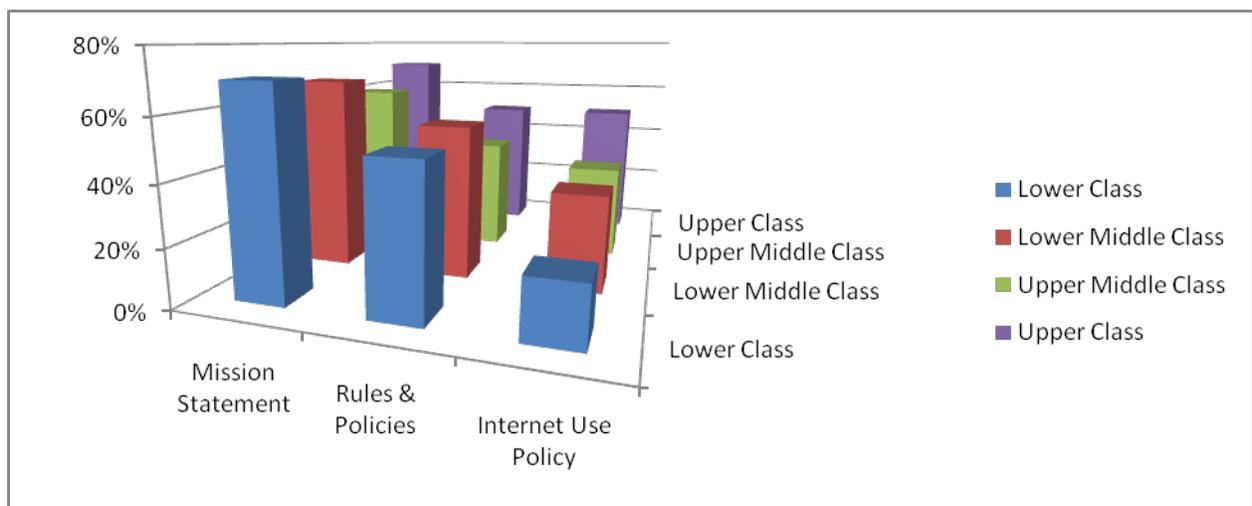


Figure 1

Comparison of socio-economic status and standard policy information

Through the use of a checklist we were able to next review the websites to identify the existence of links to curriculum related guidelines for parents and students alike. The items we

identified as curriculum related were links to New York State curriculum and state standards; it was also felt that since classroom level pages should include what and when subjects are covered as well as identification of state leveled examination scheduling.

Table 4

Curriculum and Classroom Information pages

Item	Lower Class	Lower Middle Class	Upper Middle Class	Upper Class
Curriculum and Standards Classroom Level Information Page	4	5	9	7
Classroom Level Information Page	2	6	5	3

In table 4 the findings included a distinct correlation between socio-economic status and distribution of curriculum information. Seventy percent of those districts falling into the upper SES provided links to the state standards verse only forty percent of those falling in the lowest SES.

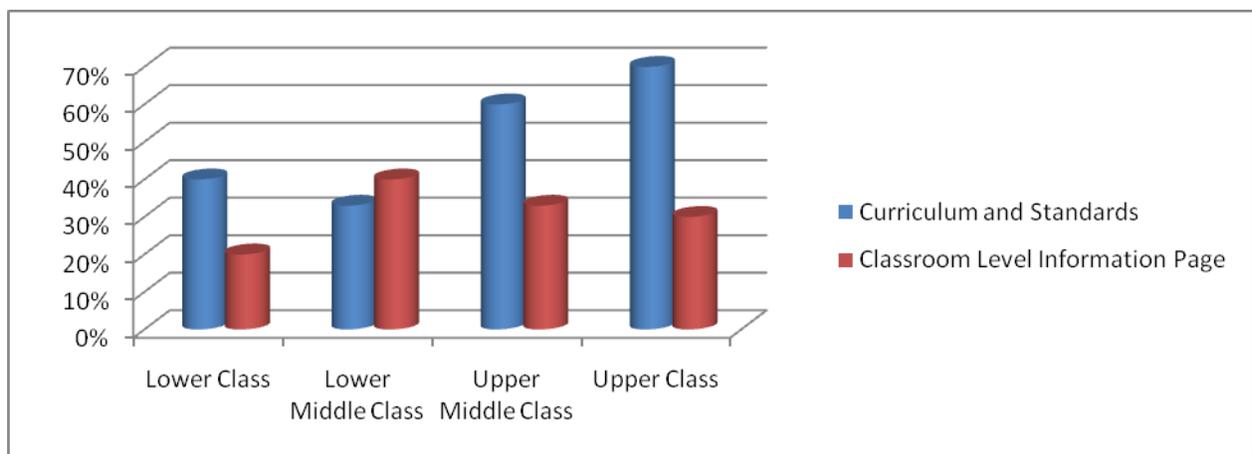


Figure 2

Percentages of schools within a SES that have curriculum and classroom information pages.

Among the many valuable things a school district website can provide it users are rather general but everyday needs parent, teachers and students may have. These items can include

teacher information pages (who is teaching what grades), grade level information pages (supply lists and classroom calendar), school news and happenings, school calendar, breakfast and lunch menus and simply the physical location of the school. While reviewing the data we have been able to identify that the most common component was all but one district identified the physical location of the schools within the district.

Table 5

General information found at school district websites

Item	Lower Middle		Upper Middle	
	Lower Class	Class	Class	Upper Class
Teacher Information	8	10	9	7
Grade Level Information Page	2	2	4	5
School News	8	14	14	9
Breakfast and Lunch Menus	8	13	11	7
Student Work Samples	3	6	6	1
Physical Location of the School	10	15	15	9

One of the more apparent findings was however, that regardless of SES school districts fail to promote students success through the display of student work. Our belief for this startling finding is that many districts may fear that such actions may draw attention to the individual and may lead to legal issues. In such situation the school can protect the individuals by only using first name when photos of the individual as associated with work.

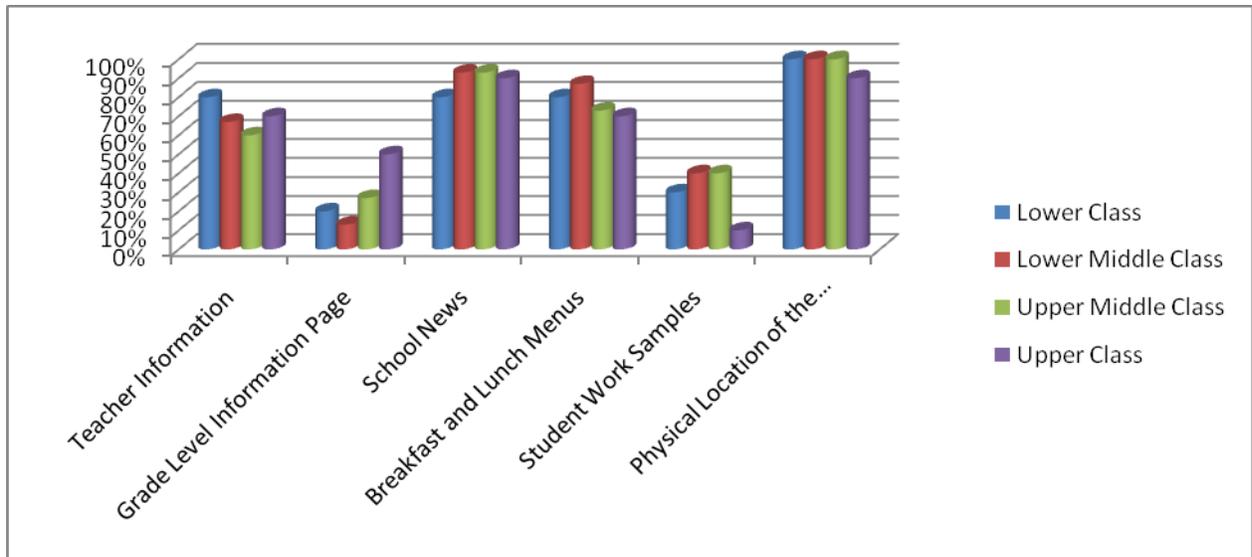


Figure 3

Percentage of schools general information found at school district websites

As previously discussed opening the doors of communication between parents, students, and teachers is the most important idea behind the use of technology. School district websites can provide users unlimited resources. School district website can include resources for parents, students, and teachers alike and it can provide instant feedback on tasks they may frustrate parents and students. The next area our first instrument allowed us to key in on was what we have titled resources. Under the heading of resources we looked at the availability of links for teachers, links for parents, links for students and the idea of a homework hotline. The findings were startling few schools have the availability of online help for homework.

Table 6

Resources made available for users

Item	Lower Class (n=10)	Lower Middle Class (n=15)	Upper Middle Class (n=15)	Upper Class (n=10)
Home School Organization Info	90%	80%	87%	70%
Homework Hotline	20%	27%	27%	20%
Links for Teachers	40%	53%	67%	50%
Links for Parents	50%	73%	73%	70%
Links for Students	70%	73%	67%	50%

In table 6 we are able to see that districts overall disseminate home school organization or Parent Teacher Association meeting times and officers. On the other hand districts fail to provide parents and students information that may help them, help themselves. Lists of helpful links for students and parents across the socioeconomic statuses were on average below the 70% level.

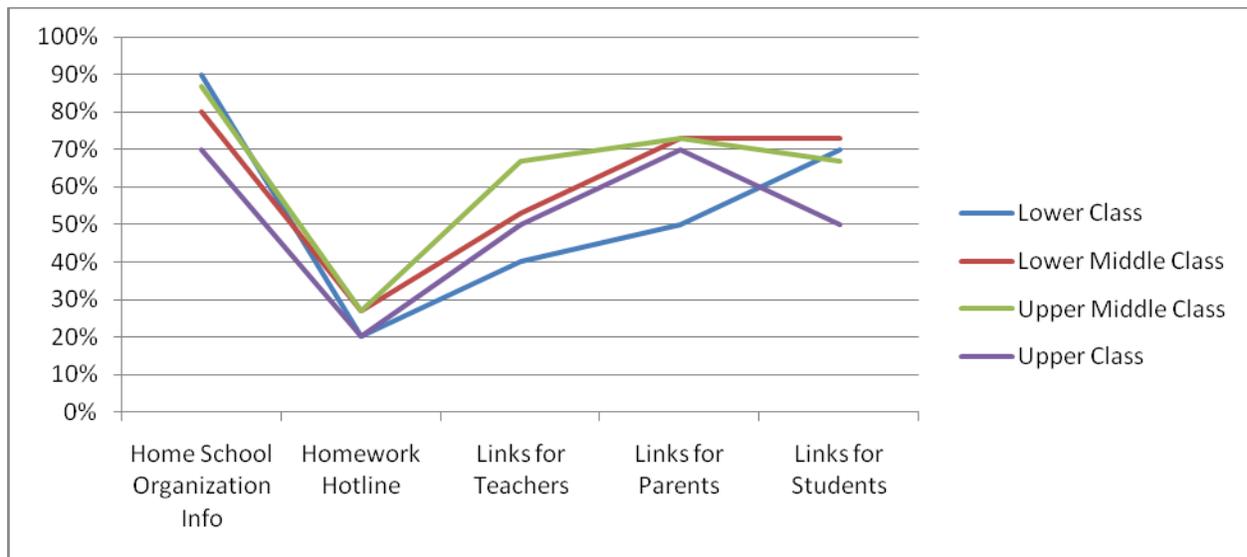


Figure 4

Percentage of resources made available for teachers, parents, and students.

The review of the data as a whole gathered from the first instrument the School District Content Checklist has shown that regardless of socio-economic status websites fail to provide such useful

resources as homework hotlines for students, classroom level informational pages, an explanation of the district Internet Safe Usage policy and many district fail to promote student success by displaying the student work.

Our second instrument WebMAC Professional was abstract but provided a great deal of comparative data. There were a total of 32 questions each worth a possible three points, whose value coincided with the researcher’s view whether they strongly agreed the website possess the questioned quality (this equaled three points. If the researchers felt they somewhat agreed or somewhat disagreed the respective grade was a 2 or 1. In the event that the researchers found that the school district website completely failed to contain elements of a question the applicable score was a zero. The second instrument had a total of 32 questions that feel into one of four types of categories stimulating, meaningful, organization and ease of use. The WEBMAC tool then called for these four categories to formed two distinct dimensions to included summary motivation for both Value (V) and Expectation for Success (XS). The summary motivation V included the combination of stimulating and meaningful natures of the website where as the summary for XS included the sub categories of organization and ease of use.

Table 7

Average score for summary motivation on selected question to determine website success.

	Stimulating		Meaningful		Organization		Ease of Use	
	5	17	6	26	3	19	20	28
School SES Level Lower Class	2	1.9	1.7	0.7	1.9	2.55	1.9	2
Lower Middle Class	2.29	1.83	1.87	0.17	1.93	2.83	2.13	2.43
Upper Middle Class	2.1	1.7	1.68	0.47	1.83	2.7	2.17	2.03
Upper Class	1.75	1.8	1.45	0.8	1.85	2.65	2.19	2.35

### *Summary Motivation for Value*

#### *Stimulating*

Figure six compares the average scores on two of the questions that make up the stimulating construct. This comparison was in the form of question five were districts were judged on whether there is an eye-catching title and/or visual cue on the home page of this Web site that will attract the users' attention. In question 17 the school districts were judged on the variety of formats (e.g. text, images, sound) used to help to maintain the attention of the users. For the lower class socio-economic group the overview visual on the home page varied while the variety of formats was consistently positive with the exception of school 36. For the Lower Middle Class socio-economic level the district average score for the overall visual appeal was above average for most schools. School District 15 failed to meet the requirements for any stimulating attributes on their page. With regards to using a various type of media on their site, there seemed to be no consistent theme across the socio-economic level.

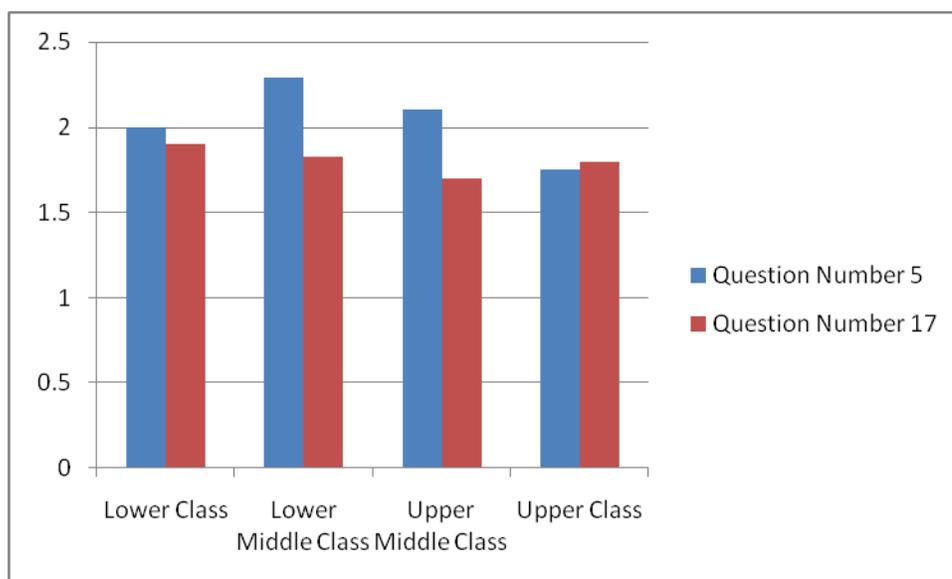


Figure 6

Average score for stimulating website aspects across the socioeconomic statuses.

The Upper Middle Class scored inconsistent in both areas as far as their stimulating attributes on their district webpage. Notably, for both overall visual appeal and hosting a variety of formats, the schools in the Upper Middle Class either performed above average or below average rather than falling in the average category. The Upper Class School had the widest range of stimulating features with two schools offering multiple formats of information to in video, audio, and bilingual text. The upper class also had two districts that had little to no stimulating graphics as well as the district that was identified as the most confusing.

### *Meaningfulness*

The second element that was investigated using the WebMAC Professional evaluation tool was the meaningfulness of the school district website. In other words the districts websites were compared within their socio-economic status by comparing the information found at the site. Using the same 3 point scale the 50 sites were reviewed, for the purpose of this research question 6 and 26 were found to be the most relevant. Question 6 asked if the websites provided valuable links to other useful websites and Question 26 wanted us to determine if the website provides opportunities for interactivity to engage users. While most of the school in the lower socio-economic level did provide links to valuable websites, several of the schools performed below average, with one school providing no links at all. With regards to engaging the students, only two schools in the lower SES showed to have been meaningful experience for us as the researchers.

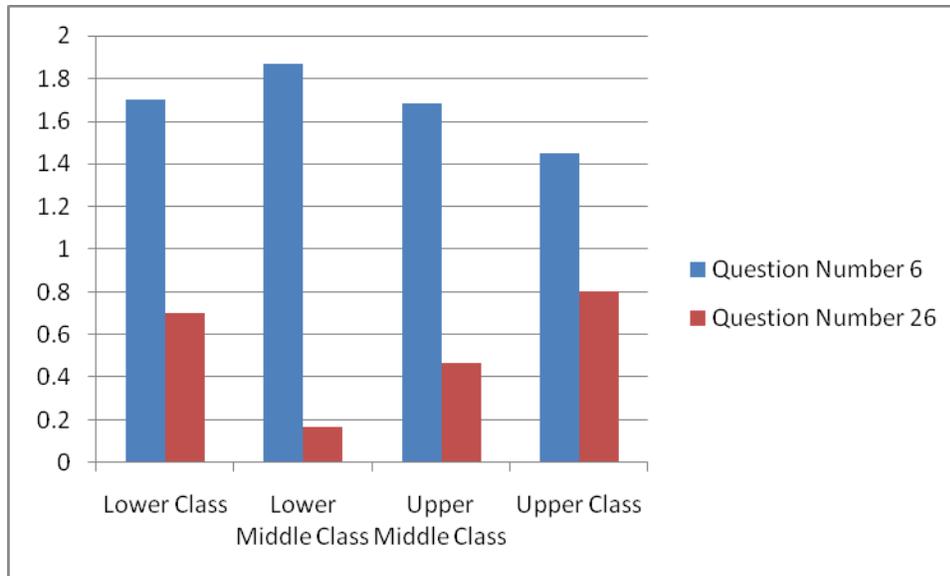


Figure 7

Average score for meaningful website aspects across the socioeconomic statuses.

The lower middle class schools scored somewhat similar with regards to meaningfulness in the area of providing valuable links to other websites. However, there is a significant difference in the interactivity level for this socio economic class. Most schools had little to no interactivity opportunities on their sites.

The Upper Middle class socio-economic levels showed no significant increase in the amount of schools that provided valuable links to other websites. However, this socio-economic level similarly scored a negative average with regards to interactivity. Three upper middle class school districts had without a doubt the ability for users to interact in real time with district personnel. The meaningfulness of the Upper Class socio-economic school district websites were again inconsistent. Not one school district displayed a clear interactive mode and only a view provided accessibility to all users. Although as seen in those stimulating questions the same website in the upper class did not necessarily have meaningful websites.

In comparison across the socio economic on Long Island there appeared to be a distinct

failure to offer the website user multiple means of accessibility to the websites. In table 6 only Four of 50 school district websites offer means of communication beyond written text. The use of picture, sound and language translation tools are necessary to help all users to decode information found at any particular school district website. Regardless of socio economic status questions 17 and 26 results fall short of expectations of what a stimulating and meaningful school district webpage would contain. Table 8 identifies the scores for the 50 school districts on the variety of formats (e.g. text, images and sounds) available to help maintain attention (Question 17) and the websites provision of opportunities for active participation or contribution of ideas (Question 26).

Table 8

Average score for summary motivation comparison of stimulating and meaningful questions

	Stimulating 17	Meaningful 26
School SES Level		
Lower Class	1.9	0.7
Lower Middle Class	1.83	0.17
Upper Middle Class	1.7	0.47
Upper Class	1.8	0.8

*Expectation for Success Summary Motivation Scores*

*Organization*

The second component of the WebMAC professional evaluation tool was the summary motivation score of the expectation for success or in other words how organized were the websites and were they easy-to-use websites. The comparison of the data both researchers individually gather during the assessment of the websites with respect to the components of organization and ease of use resulted in the dismissal of three questions (one from the

organization questions and two from the ease of use questions). After the validation of the results that again included scores worth a possible three points, whose value coincided with the researcher's view whether they strongly agreed the website possess the questioned quality (this equaled three points. If the researchers felt they somewhat agreed or somewhat disagreed the respective grade was a 2 or 1. In the event that the researchers found that the school district website completely failed to contain elements of a question the applicable score was a zero.

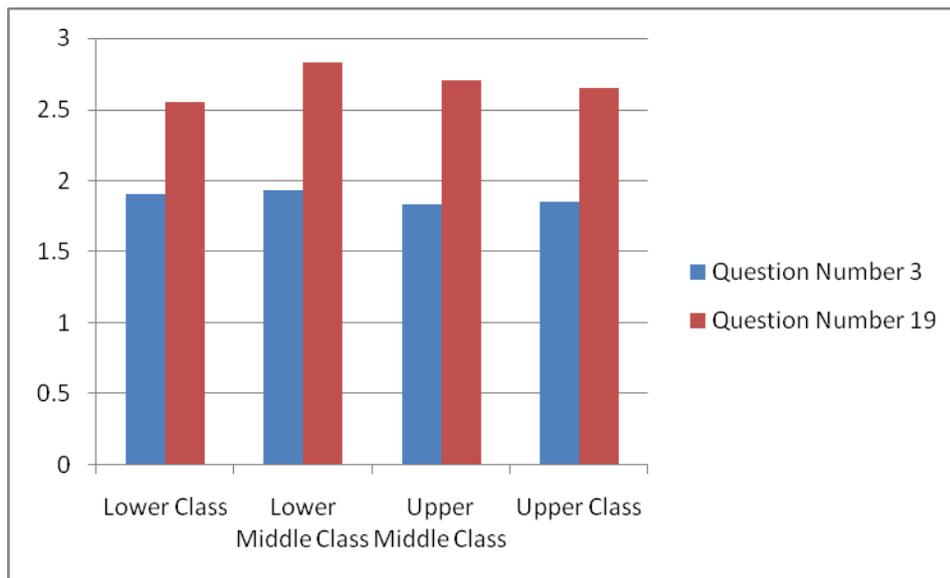


Figure 8

Average score for organizational aspects of district websites across the socioeconomic statuses.

Among the questions that were categorized as judging the organization of the website design were questions three and nineteen. The third question was comparable to question seventeen from the stimulating portion of the research which provided an opportunity to check the consistency of our research. Question 19 evaluated whether the websites presented information in a clear and consistent language and style. The results for the both the lower and upper class provided similar results in that among the two SES levels one a total of three schools had negative scores for the presentation of the website in clear and consistent language. Figure 8

identifies the average scores across the socio-economic statuses for district websites on questions 3 and 19.

*Ease of Use*

The second component of the expectation of success summary motivation score was the ease of use or the districts websites. When viewing a website it can immediately be determine whether or not the site is “easy-to-use” because the sites can offer such items a webpage search features, automatic home page referral keys, and help functions. One often over looked aspect of a website is quality control meaning assurance that all hyperlinks are fully functioning and all mechanisms for moving around the site are fully functioning. In figure 9 we are able to see a districts in both the lower and upper SES need to address the operational functions of their websites. The most common flaw was the improper functioning of navigational mechanisms which included multiple inactive hyperlinks at the districts websites.

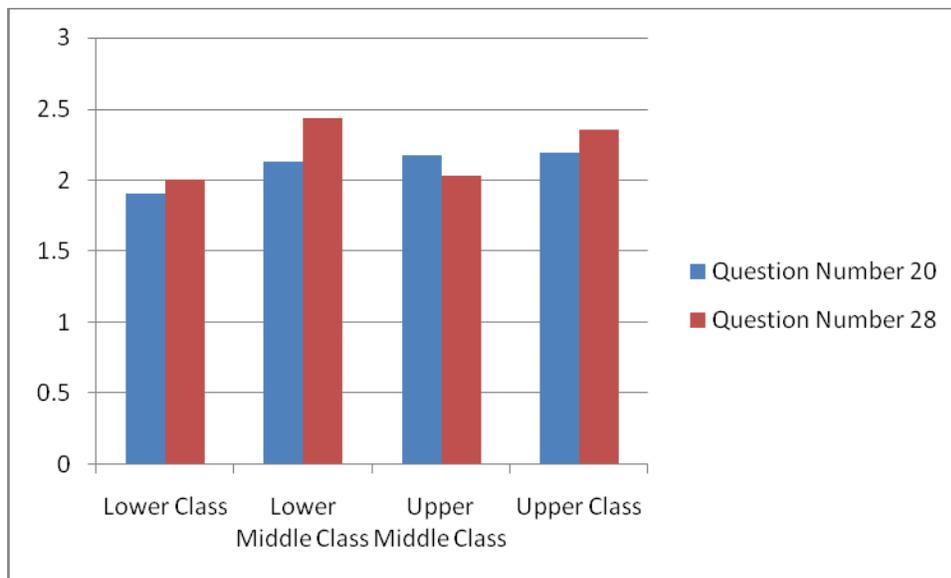


Figure 9

Ease of use average grades on questions 20 and 28 for lower class districts

The data gathered on the expectation for success components of organization and the ease

of use for the middle class school districts is included in Figures 10 and 11. At both levels of the middle class websites presented information using clear and consistent language and style in accordance with question 19. The most common low scores came again on question three for both the lower and upper middle class. The low score was consistent with the lack of providing users with the supportive features of visual and audio affects. Districts at the lower and upper middle class levels had similar issue with the functionality of hyperlinks for items such as word documents, calendars and policies within their own website and the hyperlinks to websites they recommend for their users. In contrast to the issues with hyperlinks found at both levels there were only a few issues with navigation mechanisms for moving around the websites themselves.

#### *Cross Summary Motivation Analysis*

Similar to the results on question 17, question 3 resulted in a majority of positive responses but only and hand full of districts receive the maximum score of three points because of the failure to provide audio and visual clarification tools to describe topics.

Table 9

Cross summary motivation analysis of stimulating and organization questions

	Stimulating 17	Organization 3
<b>School SES Level</b>		
Lower Class	1.9	1.9
Lower Middle Class	1.83	1.93
Upper Middle Class	1.7	1.83
Upper Class	1.8	1.85

In table 9 is the cross summary motivation comparison of the questions 3 and 17, results are similar with the lower grades on average going the broader ranging question (question 3).

### Discussion

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 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.

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. Teacher 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.

### Conclusion

“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 research determined that it as a field educators need to develop meaningful websites where all uses can not only access information but also be directed to additional help and support. Further research should include investigation of individual school websites. Looking at the current effort at the school levels will help to identify the importance placed on the internet more so websites by school leadership as a tool in communicating with the community at larger. Individual school development of websites should be viewed as an opportunity for publication of student work and could be a motivating factor in student achievement.

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Appendix A  
 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 Involvement	“Research has found that cultural and socioeconomic factors 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,

<p>Harthorne, R., Friedman, A., Algozzine, B., &amp; Isibor, T. (2006)</p>	<p>School Websites</p>	<p>as well as the need for data-based decision-making when providing district technology professional development.”</p>
<p>Hew, K. &amp; Hara, N.</p>	<p>Professional development</p>	<p>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”</p>
<p>Hoover-Dempsey, K., Bassler, O., &amp; Brissie, J. (1992).</p>	<p>Parental Involvement</p>	<p>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.</p>
<p>Hoover-Dempsey, K., Battiato, A., Walker, J., Reed, R., DeJong, J., &amp; Jones, K. (2001)</p>	<p>Parental Involvement</p>	<p>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”</p>
<p>Hoover-Dempsey, K., Jones, K.P., Reed, R., and Walker, J. (2000)</p>	<p>Parental Involvement</p>	<p>“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”</p>
<p>Ivers, K. S., &amp; Barron, A. E. (1999).</p>	<p>School Web pages</p>	<p>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.</p>
<p>Judge, S., Puckett, K. &amp; Bell, S. M. (2006)</p>	<p>Digital Divide</p>	<p>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.”</p>

Koehler, L.	Web Resources	This article describes the top 50 essential web sites for teachers of 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-

		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

		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 ehomerom.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

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.

**Appendix B  
School Website Checklist**

	<b>Yes</b>	<b>No</b>
<b>Mission Statement:</b> the school's primary purpose		
<b>Rules and Policies Link:</b> Behavior and attendance policies and consequences for infractions		
<b>Curriculum and Standards:</b> Information that is going to be taught and expectations for mastery		
<b>Teacher Information:</b> who is teaching and at which position of grade level.		
<b>Home School Organization Information:</b> (PTA) List of officers and meeting schedule.		
<b>Grade level information page:</b> supply lists and other information for individual grades		
<b>Classroom level information page:</b> information of importance given by individual teachers on a classroom level.		
<b>School news:</b> newsletters or announcements of school activities		
<b>Home work hotline:</b> tips for homework or posting of class homework assignments		
<b>Breakfast and Lunch menus:</b> what the school cafeteria is offering for these meals		
<b>School Calendar:</b> when is the school in session, when holidays will be observed, when will report cards be issued		
<b>Links for Teachers:</b> sites beneficial to teachers		
<b>Links for Parents:</b> sites that are interesting and helpful for parents		
<b>Links for students:</b> sites that are of interest to students or that may help them in their studies		
<b>Student Work Samples:</b> photos of students' work <i>without names</i>		
<b>Physical Location of the School:</b> the school's address		
<b>Internet Use Policy:</b> school board internet policy and tips for safe use of the Internet.		

Adapted from Miller, S., Adsit, K., & Miller, T. article *Evaluating the Importance of Common Components in School-Based Websites: Frequency of Appearance and Stakeholders'*

\* Paul D. Acquaro & Marianne DeMarco 2007

## Appendix C

**Website Motivational Analysis Checklist (WebMAC)  
Professional<sup>®</sup>****DIRECTIONS:**

*WebMAC Professional* was designed for professional educators to assess Web sites for use in classroom instruction or for student use in homework assignments or projects. Before using *WebMAC Professional*, it's a good idea to spend some time exploring the Web site to be evaluated in order to have some familiarity with its content and structure. You may need to go through the Web site at least once more to complete this checklist.

Rate your level of agreement with each of the 32 items on the next two pages by placing the appropriate number value on the line in front of each item. If you are not sure about any item, select the best response you can give.

- 3 = strongly agree
- 2 = somewhat agree
- 1 = somewhat disagree
- 0 = strongly disagree
- NA = Not Applicable

**Example of completed item:**

3      0. This Web site makes me happy.

After you have rated all 32 items, go back and look at each NA item. You should place one of the following scores next to the NA for that item.

0 = the Web site would have benefited if it had included the item (e.g. audio).

1 = the Web site didn't require that item.

2 = the Web site was better off for *not* including that item.

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## WebMAC Professional

Your Name \_\_\_\_\_

Grade level/subject \_\_\_\_\_

Web Site URL \_\_\_\_\_

Directions: Place the appropriate number about this Web site on the line preceding each item.

- 3 = strongly agree
- 2 = somewhat agree
- 1 = somewhat disagree
- 0 = strongly disagree
- NA = Not Applicable

- \_\_\_ 1. The screen layout of this Web site is attractive.
- \_\_\_ 2. There is a menu or site map at the beginning that describes what content is contained within the Web site.
- \_\_\_ 3. Visual (e.g. videos, photographs) or audio information included in this Web site helps to clarify or describe the topic.
- \_\_\_ 4. Navigating this Web site does not require any special skills or experience by me or my students.
- \_\_\_ 5. There is an eye-catching title and/or visual on the home page of this Web site that will attract students' attention.
- \_\_\_ 6. This Web site provides valuable links to other useful Web sites.
- \_\_\_ 7. The purpose of this Web site is always clear to me.
- \_\_\_ 8. The Web site has a help function that I or my students can use at any time.
- \_\_\_ 9. This Web site is fun for students to explore.
- \_\_\_ 10. The Web site's information is provided by credible sources.
- \_\_\_ 11. The directions for using this Web site are simple and clear.
- \_\_\_ 12. I can control the pace of moving through this Web site at all times.
- \_\_\_ 13. The information on my topic included in this Web site is interesting.
- \_\_\_ 14. The information contained in this Web site is current and up-to-date.
- \_\_\_ 15. There is useful information on my topic at this Web site.
- \_\_\_ 16. This Web site's graphics are crisp and clearly visible.
- \_\_\_ 17. The variety of formats (e.g. text, images, sound) helps to maintain attention.
- \_\_\_ 18. The information at this Web site is accurate and unbiased.
- \_\_\_ 19. All of the information at this Web site is presented using clear and consistent language and style.
- \_\_\_ 20. All of this Web site's hyperlinks are active and fully functioning.

Name \_\_\_\_\_ URL \_\_\_\_\_

- 3 = strongly agree
- 2 = somewhat agree
- 1 = somewhat disagree
- 0 = strongly disagree
- NA = Not Applicable

- \_\_\_ 21. This Web site has novel or unique features that make it more interesting for students.
- \_\_\_ 22. There is little or no unimportant or redundant information at this Web site.
- \_\_\_ 23. The text at this Web site is well-written without grammatical, spelling, or other errors.
- \_\_\_ 24. At all times, I can control what information at this Web site I wish to see or show my students.
- \_\_\_ 25. There are unexpected surprises at this Web site.
- \_\_\_ 26. This Web site provides opportunities for interactivity to engage students.
- \_\_\_ 27. This Web site provides the appropriate amount of information on the topic for a lesson or assignment.
- \_\_\_ 28. All buttons and other navigation mechanisms for moving around at this Web site work the way they should.
- \_\_\_ 29. The colors and/or background patterns used in this Web site are pleasing.
- \_\_\_ 30. This Web site provides opportunities to communicate with its authors.
- \_\_\_ 31. No matter where I am in this Web site, I can return to the home page or exit.
- \_\_\_ 32. The amount of time it takes for pictures, games, videos, etc. to appear on the screen at this Web site is reasonable for teaching/learning situations.

-----

There is enough at this Web site to warrant a return visit. YES  NO

I would recommend this Web site to my colleagues. YES  NO

What is the greatest strength of this Web site? \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_

What needs improvement at this Web site? \_\_\_\_\_

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

## Scoring *WebMAC Professional*

Before transferring scores, go back to each item designated as "NA" and choose a score for that item based on the following criteria:

- 0 points if you feel that the site would have benefited if it had included the item (e.g. audio).
- 1 point if you feel that the Web site didn't require that item.
- 2 points if you believe the site was better off for *not* including that item.

When all 32 items have a number score, transfer each score into the appropriately numbered space in one of the four columns below. Then add the scores for each column and write the total on the appropriate line.

<u>S</u>	<u>M</u>	<u>O</u>	<u>E</u>
1. ___	2. ___	3. ___	4. ___
5. ___	6. ___	7. ___	8. ___
9. ___	10. ___	11. ___	12. ___
13. ___	14. ___	15. ___	16. ___
17. ___	18. ___	19. ___	20. ___
21. ___	22. ___	23. ___	24. ___
25. ___	26. ___	27. ___	28. ___
29. ___	30. ___	31. ___	32. ___

TOTAL S \_\_\_ TOTAL M \_\_\_ TOTAL O \_\_\_ TOTAL E \_\_\_

The **S** column reflects how **STIMULATING** this Web site is for you.

The **M** column reflects how **MEANINGFUL** this Web site is to you.

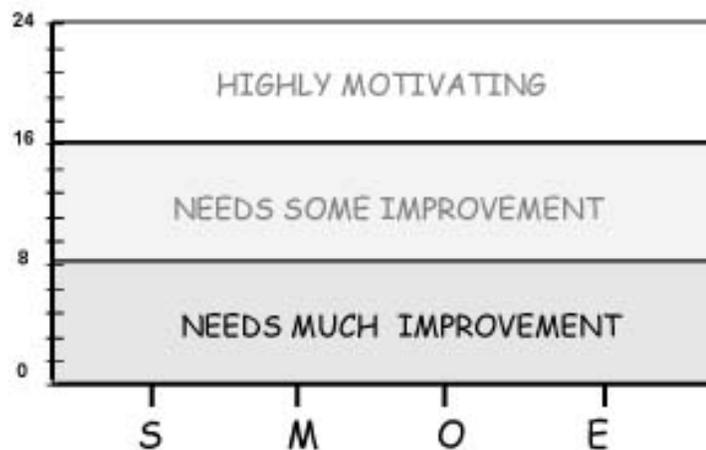
The **O** column reflects how **ORGANIZED** you think this Web site is.

The **E** column reflects how **EASY-TO-USE** this Web site is for you.

## Transforming Scores

Now you may transform your scores into visual representations so that you can clearly see the results of your evaluation.

1. Take each of the four total scores above and plot them (either with a dot or a bar) on the graph below.
2. If you use dots, connect the dots to make a line.



Now take the total scores from the four categories (S, M, O, E) and add them together in the following way to get your two overall motivational quality scores.

$$S + M = \underline{\hspace{2cm}} (V) \quad O + E = \underline{\hspace{2cm}} (XS)$$

The **V** score reflects a summary motivation score on the Value dimension; i.e. how stimulating and meaningful the Web site is. The **XS** score reflects a summary motivation score on the Expectation for Success dimension; i.e. how organized and easy-to-use the Web site is.

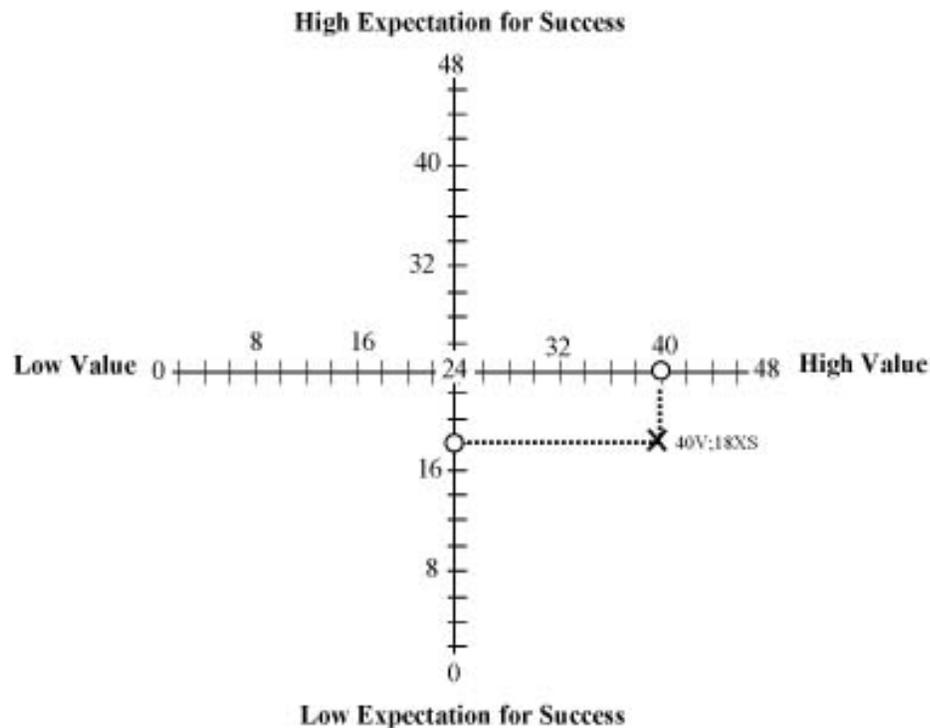
## Plotting the Scores

To plot scores on the scoring grid,

1. Place a dot for the **V** score along the Value continuum and a dot for the **XS** score along the Expectation for Success continuum on the grid.
2. Draw straight lines to their intersection point, representing the overall motivational quality score of the Web site

In the example below the evaluated Web site received a Value score of 40 and an Expectation for Success score of 18. Their intersection point falls within the lower right quadrant of the grid. Now go to the next page to record your scores.

### Example Completed Scoring Grid



To record your actual scores onto the scoring grid.

1. Plot the score for **V** along the Value continuum and the score for **XS** along the Expectation for Success continuum.
2. Draw straight lines to the intersection point.

