Function of Classroom Websites

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In education, technology is becoming increasingly more important in the delivery of concepts in school and from home. From the use of hand held devices to submit answers in class to online Webquests where students are consuming and applying what they learn from the Internet, technology is an essential aspect of learning in K-12 classrooms. As new technology is being developed, teachers are jumping in and using it before testing the impact the technology has on students. It is important to understand the outcome from using technology and making sure the technology is being used how the teacher expects it to. In preparation for this paper, research was conducted on the expectations and function of classroom websites based on parent and teacher opinions. By conducting a literature review on user experience (UX) research of websites and a literature review on communication with technology, background information was gathered that drove the research process on the function of classroom websites. The goal of this research paper is to identify the expectations parents and teachers have about classroom websites. That information was then used to create UX research tasks on the function of classroom websites from both perspectives of parents and teachers, so the teachers can better design and implement classroom websites that will be used by parents and students to extend the school day beyond the classroom and into students’ homes.

**What Should Educators Know about Website User Experience: A Literature Review**

This literature review will focus on user experience research related to educational technology and websites. In education, Classroom websites are important because they are a means to provide students and parents with ways to emphasize education from home while also linking them to other educational support websites (Hill, 2010). However, educators are not always aware if their websites are being used effectively. One way to measure if a website is being used effectively is to conduct user experience (UX) research, which can be done using a variety of methods. UX research can help to create quality experiences for the users while simultaneously preventing problems the users might encounter with the technology or website (Hassenzahl & Tractinksy, 2006). This was not an exhaustive literature review, but a focused review of the literature. The goal of this literature review is to gather resources about UX on educational websites to find out if UX research can help teachers modify and improve their websites so they can offer the most effective form of communication possible.

**Search Criteria**

The initial research questions used were (a) how is user experience research conducted on educational software or websites? (b) How does good user experience research impact users of educational software or websites? EBSCOhost and Proquest databases were used to conduct the search for literature. The search criteria included “user experience and educational websites”, “user experience and educational software”, and “user experience and classroom”. These search terms resulted in few articles (n = 3) related to the research questions. With the lack of results, the search criteria were expanded to “user experience”, “user experience and website”, and “user experience and education”. The databases used were also expanded to include Association of Computing Machinery Digital Library (ACM DL). With these changed search criteria and the addition to the databases, more usable results were located (n = 50,251). However, with user experience research becoming the focus over education with the new search terms, 16 articles were found that answered the research questions that also related to user experience research and education. With the small number of articles related to the research questions focused on education, the research questions were changed to exclude educational websites and software. Since the two topics are closely related, the assumption can be made that UX research outside of education has the same characteristics as UX research with educational websites.

**Exclusion and Inclusion Criteria**

The revised research questions were: (a) how is UX research conducted on software or websites, and (b) how does good UX research impact users of software or websites? With the new search criteria in place, all articles that were not peer-reviewed or had a full text version of the article were excluded from the search. In addition, any article that did not directly relate to the new research questions was excluded. All articles that were older than 15 years were also excluded from the literature review. Articles that did not explain how the UX research was conducted were excluded from this literature review. Furthermore, articles that described situations that could not be related to education were excluded. For example, articles that described UX research on food were excluded from this literature review. Articles that helped to answer the new research questions and were directly related to user experience, websites, software, or education were included in the literature review. The 16 articles that were included were grouped based on the three central ideas of the literature review: (a) foundational research on user experience (n = 7), (b) how to conduct user experience (n = 13), and (c) the impact of user experience (n = 3).

**Results**

**Foundational Research on User Experience.** This section presents findings on what user experience is and why user experience is conducted. User experience helps people understand how technology is being used (McCarthy & Wright, 2004). There are many aspects to what user experience encompasses. User experience can include a person’s emotions, senses, and the structure of the technology in focus (McCarthy & Wright, 2004). The perceptions on the usefulness and usability of the technology are another factor in user experience (Kujala, Roto, Väänänen-Vainio-Mattila, Karapanos, & Sinnelä, 2011; Felker, Slamova, & Davis, 2012). How the technology is used by the audience versus how the technology was created to be used can describe the intentions of the audience and the producer. Intention towards the technology can also be included in user experience (Mahike, 2002). User experience can be summed up as all emotional, sensual, and factual reactions toward a particular technology being used. With this variety of aspects that can incorporate user experience, it is important to know why the UX research is being conducted so certain factors can be isolated during the research.

User experience research should be conducted to survey the consumer of the technology. Finding out the satisfaction of the user is important so the consumer continues using the technology or going to a particular website (Tuch, Bargas-Avila, Opwis, & Wilhelm, 2009). With websites, having an aesthetically appealing start page is a good way to attract users, so conducting user experience research on different layouts, color schemes, and overall visual complexity allows the producers to create a website that people will want to visit (Tuch et al., 2009). To measure quality experiences, UX research should be conducted. Using UX research methodologies, one can gather the appropriate data to tell the producers if what they created is actually something worth continuing to produce (Hassenzahl & Tractinsky, 2006). User experience research is also important to decide if the technology enhances the experience of the user (Wang, Xhou, Yu, Wang, & Ni, 2010). Depending on the outcome of the UX research, the method chosen to implement the UX research can play an important role in the user experience.

**Conducting User Experience Research.**

***Survey method.*** In this section, the survey method of conducting user experience research will be explored. Since UX research focuses on the consumers’ perspective, surveys help to gather the consumers’ opinions and feelings in a structured way. Surveys can be used in conjunction with other UX research methods or they can be used as a standalone method. The wording of the survey is as important as the survey itself. According to Hartmann, De Angeli, and Sutcliffe (2008), framing the statements in a positive structure produces better ratings. The framing of survey statements affects the outcome. Always use positive statements instead of negative statements when creating an UX research survey. Another aspect to creating surveys is using a Likert scale. A Likert scale is when a statement is provided on a topic and the person taking the survey selects from a choice of statements that typically range from “strongly agree” to “strongly disagree” (Jamieson, 2004). Likert scales can be used for rating overall quality, comparing two different technologies, complexity of a website, or emotional reactions (Hartmann et al., 2008; Machado & Tao, 2007; Tuch et al., 2009; Petrie & Precious, 2010). The use of Likert scales should be determined by the user experience being conducted. Another aspect to giving surveys with UX research is the types of questions to ask. To have the surveys anonymous, demographic information like age ranges and sex are gathered, which still allow for a detailed analysis of the results (Kallinen & Partala, 2011). Likert scale questions in UX research can ask for the participant to rate their comfort with technology from, where a 1 is neutral, 2 comfortable, and 3 is highly-comfortable (Machado & Tao, 2007). Another example of using Likert scale questions with UX research can ask participants if there were usability issues while performing task, where 1 is not at all or very much and 9 is very much (Kallinen & Partala, 2011). Besides the different ways to ask survey questions, there are different ways to administer the survey.

Once the design of the survey has been determined, there are many ways to implement the survey. The subjects who are tested can have exposure to the product, take a survey to see the subject’s perceptions after the use of the product, and then take the original survey as a follow to see if opinions have changed over a certain period of time (Cowan, Jack, & Vigentini, 2009). The most common survey administration is to expose the subject to the product and then give them the survey (Machado & Tao, 2007; Mahike, 2002). The administration of the survey depends on the desired outcome of the UX research. To measure the emotional response elicited from the product or website, administering the survey after the subject has had a chance to view and play with it will produce the most effective results (Machado & Tao, 2007; Mahike, 2002). However, if the purpose of the UX research is to measure the subject’s perspectives over time, then there should be a follow up survey given after the initial product introduction and survey (Cowan et al., 2009). The questioning and administration of surveys depends on the expected outcomes that the producers want to gain from the user experience. However, there are other types of UX research beyond just giving a survey.

***Task focused method.*** Besides the use of surveys, having the consumers perform a specific task with a product or website provides good user experience data. The survey is an important aspect of UX research, but it can be incorporated with the task. Having the consumers perform specific tasks on a website within a given time frame followed by a survey can gather useable data that can decipher many different qualities of a website, dependent upon how the survey was written (Mahike, 2002). Tuch et al. (2009) used tasks to measure the stress level of consumers as the searched on provided websites. Their goal was to prove the importance of visual complexity for the home page of a website. Through the use of different groupings of the consumers, some had a passive viewing experience, where they only looked on the websites, while the other group had a visual search task, where they had to locate specific information. Based off the different tasks, each group was measured on heart rate response, electromyography (EMG) response, and electrodermal activity (EDA) response. This was done to support the participants’ answers, because pleasantness and intensity can be measured with heart rate, EMG, and EDA response. After each group performed their specific task, they were surveyed. Through the use of the task, Tuch et al. were able to gather data that could not be possible with only giving the consumers a survey. They were able to measure pleasure and physiological responses. The addition of a task to UX research is another way to gather more complex data.

***Think aloud method.*** Another user experience method that is used with websites and other technology is the think aloud method. With think aloud, the participants are asked to perform tasks. While they are performing them the participants are asked to talk about what they feel or any problems they encounter (Petrie & Precious, 2010). The main purpose to using a think aloud is to understand what the participants are thinking as they perform the given task (Ward, Shadle, & Mofield, 2008). This information is important to know when doing user experience research on a website because it provides insight as to what the consumer struggles with, what is easy for them to do, and any other comments that cannot easily be gathered through a survey.

Think aloud protocols are typically combined with a task. One way is to have the participants given a task to locate some piece of information or answer a question based on a particular website. As the participants complete the task, they are asked to think aloud about what they are doing and their thoughts and emotions associated with it. By combining the task with the think aloud, it can provide information on how the participants go about locating information that the producers of the website might not have thought about (Ward et al., 2008). Combining surveys, tasks, and think alouds into one exhaustive UX research plan can also be effective. Giving the participants certain tasks to complete and the guide lines for the think aloud followed with a survey after they have completed the task can help to get their thoughts and emotions from the participants (Petrie & Precious, 2010). Giving the participants the guidelines on how to have an effective think aloud and provide them with a list of words they can choose from to generate the best data possible is a great way to tap into the particular emotions the participants feel towards websites. However, not all think alouds and UX research are about emotions. With think alouds, they are dependent on the task provided, but the addition of the survey, it helps to better focus the participants feelings and thoughts that might have been missing from the free form think aloud session.

***Group user experience method.*** With UX research, data is usually gathered from individual people and then collaborated to form the overall experience generated from the individuals. However, that data can be gathered in a group setting, while also gathering additional data by using the communication from the group as part of the data collection. A component of group user experience is to take the meanings individuals make and extend them beyond that into the social experiences people create (Battarbee & Koskinen, 2005). Group UX research brings the experience of an individual and adds in the experience the individual gathers by communicating with others (Wang et al., 2010). There are different types of UX research groups. Wang et al. (2010) state that there are four groupings: tight coupled homogeneous, loose-coupled homogeneous, tight-coupled heterogeneous, and loose-coupled heterogeneous groups. Tight and loose refer to how well the group members know each other, which affects the type of communication they produce. Another form of group UX research is to create a focus group around the technology, where data is collected from the group and then individual interviews can occur if more information is needed (Lister, 2001). No matter the type of group UX research chosen, the same information is gathered in terms of opinions and emotions communicated to a group instead of individually.

One way to create a group UX research plan is to create a situation closely related to the actual usage of the technology being tested. This eliminates the need to the participants from the group user experience from having to use their imagination during the user experience. After the scenario has been put in place, the participants should start communicating their experiences while they interact with the technology. This method uses a given task (the situation created) and eliminates the need for a survey. The data of the user experience that is usually generated by administering a survey is created through the dialogue of the participants.

***Additional user experience research methods.*** The UX research methods described so far have centered around the most common UX research being conducted on technology. However, there are a few more methods are not commonly documented. To help gather user experience on websites, after providing the participants with a task, some producers gather click stream data (Lister, 2001; Ward et al., 2008). This information is helpful because it shows where people click, whether it took them multiple tries to click on the appropriate link for the task. Another UX research method is to collect data on user attention duration. User attention duration is quantified data that is calculated by taking the time it takes the participant to perform the parts of the task (Wang et al., 2010). An additional UX research method is to use software that can video of the tasks being performed, which can gather data on both clickstream and user attention duration. By using this software, more detailed data can be collected that can help the producers realize where the errors are on their website, like links that do not work or short cuts the participant took that the producer was unaware that existed (Lister, 2001). With a variety of UX research methods in existence, it is important to make sure that the method chosen to use is appropriate for the data that needs to be gathered and the impact the UX research is supposed to make.

**Impact from User Experience Research.** By conducting user experience research, the producers are aiming to improve their technology. The improvements are based upon the type of UX research conducted and the responses gained through the participants. If a task is centered on the ease of use and also measures clickstream, then the producers of the website can implement changes that make the website easier to maneuver, as well as aesthetic changes based on the survey results (Ward et al., 2008). This impacts the user by making the website easier for them to use, which can result in more traffic for the website. UX research also positively impacts the users because it helps to eliminate any bugs that might exist prior to launching the website or software (Felker et al., 2012). In addition to impacting the ease of the website or technology, UX research can impact which system is used. When comparing learning management systems, Machado & Tao (2007) administered UX research that showed that students preferred Moodle to Blackboard based on the usability and effectiveness of the system. With this information, students can now be provided a better online system for taking online courses, which can affect the grade they earn. UX research results directly impacts the users, since the users are the ones who showed the producers the changes that need to be made to increase the use of their product or website.

**Conclusions**

This literature review focused on two research questions: (a) How is user experience research conducted on educational software or websites? (b) How does good user experience research impact users of educational software or websites? In regards to how UX research is conducted, there are a variety of methods to choose from, each with their own benefits. With using surveys in user experience, it is important to focus on how the questions are phrased. The use of positive statements that follow the format of Likert scales make more effective survey questions. Besides asking questions only about the participant’s experience with the website or other technology, demographic questions like sex and age range should be included so more detailed analysis can be completed.

The literature review has lent itself to more research to be conducted on how user experience research can be used over a long period of time. The needs of the consumers change overtime. As the consumers’ technology skills change as new technologies are created, the ease of use of different website and software also need to change. Conducting UX research over a long period of time can let a company aware of if their product is keeping up with the changing technology skills of their consumers. Furthermore, the consumers' wants change of time. With changing viewpoints, how can UX research help producers to stay current and up to date? More research will need to be conducted to explore the new research question, since people and their opinions change so the UX research needs to able to change with them.

**Implications**

This literature review focused on user experience research on websites and other technology. However, the results of the review can be applied to educational websites and technology since it can be assumed they are closely related. The implications can extend from educational websites to classroom websites. Teachers and schools are using websites to communicate to parents and students. However, not many teachers or schools are implementing any type of user experience to see if the websites are being used effectively. If teachers and schools implement a survey based user experience, they could identify the aesthetics of their website and how it is being used. To extend past surveys, teachers and schools could also benefit from knowing if their websites are easy to navigate and locate information. For a school, it is important to for new families to locate important information regarding their school and its policies. However, if schools do not know that their website is confusing and hard to navigate then they are doing a disservice towards their community. Implementing UX research within educational technology allows the technology producers to know how well their product has been created and how well it will react with the consumers. Putting their audience first, the teachers and schools can better serve their community and students. UX research can allow them to create the most effective websites in terms of aesthetics, function, usability, and format, which can help to promote education from home.

**Communication through Technology: A Literature Review**

Since the 21st Century is alive with the use of technology outside of classrooms, as teachers, the technology is invading the classrooms and creating new ways teachers communicate with each other as well as students through instruction. The one thing being left behind is the communication between the teacher and the parent. Teachers have been training and using a variety of tools for the 21st century student through websites, blogs, and wikis. These tools are available through school as well as some school districts and the barriers need to be broken down to help enrich the conversation of education (Wees 2011). In order to determine which articles, journals and documents will be suitable for this study, these questions were guides when conducting the research: How do teachers use websites, blogs, or wikis to communicate with parents and students?, and What characteristics of websites, blogs, or wikis effectively facilitate communication with parents and students? For this reason, there is no need to be afraid of the shift in communication when the options are opening to expand and can easily be accessed throughout the school term and beyond the classroom hours just by clicking the button. There will always be a significant need to communicate to students and parents (Snell, 2009).

To search for articles, Google search engine, EPSCO will be the main sources to find articles written in the past five to ten years. The search terms used in the search were 21st century communication, teacher websites, teachers and wikis, teachers and blogs, classroom websites for communication, and teacher and parent communication using the internet. Articles selected for inclusion were about digital communication in the K thru 12th grade school environment. These articles are from books, textbooks, journal articles, doctoral dissertation and master theses. After reviewing forty-nine possible resources, it was narrowed down to fifteen resources that were able to answer the guided research questions. From the resources gathered, the article review is broken down into sections: the benefits of having websites, blogs or wikis and the features for communication for parents and students; the positives of having websites, blogs or wikis; and the negatives of having websites, blogs or wikis.

**Features of Websites, Blogs and Wikis**

Each technology communication tool offers a variety of ways to communicate to students and parents. Text is always going to be a form for communication whether it is posted on-line or on a flyer (Snell, 2009). This is a way for teachers to reach out by integrating communication technologies as a part of teacher’s professional responsibility (Maloy, 2010, p. 208). This responsibility will be to maintain the content of these tools with updates on a daily basis. The reason is to encompass many ways the community, as a whole, communicates with one another. While students have their own social networks, which many districts have restrict within schools such as Facebook, MySpace, and others due to the uncontrollable content being displayed. For educators, there is educational networking, which allows teachers to socialize for an educational purpose, which allows the control of the content being displayed (Maloy, 2010, p. 210). Websites, blogs and wikis have these educational features that are appealing to teachers, students and parents.

Once teachers have decided the type of communication tool to use for parents and students, the decision comes down to a one-way communication or two-way communication. One-way communication would be an example of a newsletter. A newsletter is for sharing information with a parent community and is delivered weekly or monthly (Graham-Clay, p. 119). A two-way communication is creating a dialogue with the parents, which is similar to a teacher-parent conference. By allowing the parents or students to respond in email form or blogging back and forth, gives them a chance to raise concerns, give compliments, ask valuable questions, or give feedback on assignments.

**Websites.** The main criteria to create a website, is to understand the purpose of having a website (Dunn, p.60). Lemoyne Dunn (2011) talks about the different levels of websites that go from the basic website, static, to the integration of learning through the website, and then pedagogical memory. When starting on a website, some teachers are usually on the static level, which is level one. At this level, the teacher has an introduction, an email address for communication purposes, expectations of students, and notes to parents (Dunn, 2011, p. 60). There are other teachers who are on level two, which is semistatic. This means teachers are updating information on school events and sometimes include class photos (Dunn, 2011, p. 61). For level three, supplemental resources, teachers include resources such as links that match the curriculum or videos. There are teachers who are have their websites on level four, integral curricular, or level five, pedagogical memory, which includes more of a two way communication through discussion boards or blogs. The students tend to be more involved with the website by answering questions or extended classroom discussion (Dunn, 2011, pp. 61-62). In the future, teachers for kindergarten thru 12th grade will have websites functioning on a level 4 or 5 to include more discussions and two-way communication with students and parents.

**Blogs.** With many blog sites available, choosing the right blog site where students can congregate is crucial to the visual appeal and user ability. Blogs allow students to answer questions outside of the classroom if they are too shy or scared to answer while in class (Wallace, 2007). Teachers can use blogs to update classroom information: homework assignments related or class/school events. There are schools whose blogs “increase communication with parents and staff” (Richardson, 2010, p. 25). Teachers or school official can post content in blog form as often as necessary, and usually it is posted without having anyone respond or add additional comments. This has assisted to keep parents and teachers up-to-date on the events scheduled throughout the school year. The main intention for blogs is to help create a classroom experience outside of school for the parents to be involved with their child’s education (Maloy, 2010, p.219).

Another way to look at blogs is how they should be set up to get the positive interaction with students. Students can present their findings as well as resources they have found to their classmates through blogs (Tomei, 2009, p. 243). The students become the reader in which their response is more interactive is more involved in commenting on a topic of discussion or the resource. This is beneficial to create the “social/community-centered –instruction” for constructed knowledge, collaboration, self-discoveries and self-reflection (Tomei, 2009, p. 242). Blogs can stimulate the critical thinking and can be extended beyond the classroom. Robert Maloy (2010) states a blog is very similar to a wiki.

**Wikis.** Wikis are similar to classroom websites with the exception that students can add to the site. This gives the students a chance to be in control of what goes on the site instead of just having the teacher being in control (Richardson, 2010, page 61). This allows students to collaborate with each other and be able to correct information if there is an error. Laurie Andes and Elizabeth Clagget (2011) discussed in their article Wiki Writers, how the parents were able to access a class wiki to see their child’s work and was a parts of a group collaboration with students, teachers and other professionals. Each month students were writing journals based on variety topics for each month, which were published on the class wiki for the community to see. The wiki was used as encouragement for students in special education to improve in reading and writing. The students were also able to collaborate with students from another country as a part of their assignment. The end result of this project was improved test scores and elevating all students from reading below grade level to have only two below grade level. It can be concluded that uploading and sharing content have potential excitement for those of any age, which could lead into improvement of student performance (Huff, 2005).

**Positive Attributes for Websites, Blogs and Wikis**

With the different features that each tool offers for communication, there are positive benefits that allow constant communication between teacher, student and parent. It may seem to be a complicated goal, but it can be achieved when it comes to improving student achievement (Brown). Teachers need to be proactive and think about the endless possibilities to keep parents and students in constant contact without worrying if they are reading newsletters that was sent home. This allows the teachers to showcase their effective use of technology (Starr, 2012). Each tool offers benefits for students and parents of endless communication that is accessible daily on class websites, blogs and wikis.

**Websites.** The main purpose to have a website is for twenty-four hour access of classroom information, which can be accessible daily. Homework assignments can be made available with a variety of important information so the parents can be updated with the school and class activities. The website can be in a simple format with basic information and can gradually increase in sophistication with assignment logs as well as individualized modifications for students (Graham-Clay, p. 123).

Family and friends of students and parents are able to view the website from around the world. This can develop new learning experience to discuss jobs overseas or culture. Sydney Brown documented the positive feedback of a teacher’s website and talks about a student’s family member from Turkey who made a comment about the job he does by communication through email. Of course the teacher’s email address was available on the website. In addition, administration team is able to monitor the content on the website to ensure the information meets the school standards and goals when it comes to student and parent communication (Maloy, 2010, p. 212). The websites need to be based on instructional needs within and outside of the classroom, especially when it is used for the solely for the purpose of communication with parents and students.

**Blogs.** Blogs can create a virtual community with parents and students. This can be a paperless filing cabinet of discussions between students, teachers and students, and teachers and parents especially if there is any confusion about an assignment (Richardson, 2010, p. 22). If parents have the same questions, just on message on a blog can help to answer it without having to email a group of parents and hope they look at it before the next day. Like emails, every message can be recorded with a time and date stamp and it keeps the history of a variety of conversations.

It is easy to keep updated and sources with links can be embedded into a blog for students and parents to view which could “include top ten list of teaching websites, interesting places to visit around the world, best books,….as well as other student engaging information” (Maloy, 2010, p.219). The students and parents can become more involved by adding more resources for others to view. The resources could be more relevant to an individual or group of students and parents, which turn into a lesson or extend a lesson more in depth (Richardson, 2010, p. 39). The possibilities are endless what a teacher could do with blogs to keep students and parents well informed.

**Wikis.** Wikis have similar aspects of websites and blogs. It is created with a community in mind to encourage more writing. There was one elementary school that started a writing program using a wiki and the results were well received from parents. Parents were supportive and well involved with the students’ accomplishments (Andes, 2011, p. 345). They were able to read students’ work after they were taught how to access the wiki site (Andes, 2011, p. 349). Wikis can also be utilized as a resource site in which more variety of resources can be added like PowerPoint presentations (Richardson, 2010, p. 62). In addition, a discussion can be created by adding a discussion tab. Students can reflect on assignments or negotiate on the content of the wiki (Richardson, 2010, p. 67). The feature that is helpful to see the changes is the history tab. Teachers can see the content that had been changed and who made the changes (Richardson, 2010, p. 67). If there were unnecessary changes or something inappropriate, the teacher can take action.

Another great aspect of wikis is the worldwide collaboration between students in the U.S. and students across the globe. Vicky Davis, a teacher in Camille, GA, has a wiki that extends beyond the school and students in other countries are adding information about current trends in college education (McCrea, 2011). This is great for parents to review before their student goes on to college especially when it comes to the types of technology that are available to students now days. The end result of this showing the different uses of various technology tools in college (McCrea, 2011).

**Negatives attributes of Websites, Blogs and Wikis**

With positives of using websites, blogs and wikis to keep parents and students in constant contact, there are fears and negatives with having these communication tools. A lot of fears are justified by the amount of time it takes to maintain these tools, ensuring permission from administration as well as the district, and making sure these sites are accessible to create a school without the district blocking the sites (Wees 2011). In addition, the teachers need to make sure the content is appropriate for student and parent viewing. By looking at each communication tool, they do have setbacks, especially when many teachers need the training and confidence to step into the 21st century technology.

**Websites.** The one thing teachers may forget about their website is the maintenance required to keep parents and students wanting to go back for more updated information. Referring back to Dunn’s five levels of websites, teachers usually are on the static level because school districts are requiring websites to increase parent communication and teachers do not always of time to maintain it throughout the year. In addition, teachers are reluctant to advance themselves due to the lack of confidence and encouragement to us technology (Starr, 2012). This could depend on the type of training they received or the lack of resources for a better class website.

Another aspect of a website is too much information, which makes it difficult to find what parents and students are looking for. Steve Snell discusses the criteria of having an effective websites that has a clear communication. An effective website is understandable by the use text and has a set purpose for all who visits the website, just as Dunn stated. The primary message, like homework assignments, can become lost in the clutter of words and can become overwhelming for both parents and students (Snell, 2009). Not every parent and child is the same or has the same experience with websites. If there is a blog on the website, parents may have a difficult time understanding the purpose if the blog is in a small space (Snell, 2009).

**Blogs.** Blogs should be used responsibly since it is considered like a journal or an open-book of information. The New York Times interviewed a New York City teacher about her blog and how she was using it as an outlet. It is has become the new “water cooler” for teachers vent or complain about a variety of frustrations (Santos, 2011). Teachers have to remember that any comment whether negative or positive being posted on the internet on any website can be seen by their students as well as parents. Teachers around the world are doing the same, finding out that blogging about the events help to get it off their minds. One teacher, Frank Chalk took blogging more seriously once he saw people were visiting his site. He uses the site to promote a book about school discipline (Wallace, 2007).

Not only do teachers have to watch what they say on blogs, they have to worry about what students might say when replying to another classmate’s comments (Richardson, 2010, p. 14). This is why setting expectations before the student’s blog is vital. Blogs also require planning to ensure the objective of using as a communication tool is set up for its purpose of discussing standardize topics (Maloy, 2010, p. 224). If the blog is not being maintained, then the purpose of having one is lost.

**Wikis.** Like the blogs, there is a sense of freedom of speech with limitations to the content that can be placed in. The teacher needs to make sure the content is not being erased by those who have access to it or place inappropriate wording. This is why the history tab is vital to stop the unnecessary vandalizing to students hard work. “Teachers may find that students post inappropriate or plagiarized material on a class wiki, either purposely or unknowingly,” (Maloy, 2010, p. 231). This is important to set expectations as to what content should be placed on the wiki. There is always one parent who could halt any wiki sites if they see anything inappropriate with the content (Richardson, 2010, p. 61). Majority of the time these inappropriate contents were caught and fixed by the administrator of the website (Huff, 2005). Therefore, catching the inappropriate or inaccurate content is very slim but it happens.

**Conclusion**

With the endless possibilities of creating a website, blog or wiki, communication between teacher, student and parent should not falter. Each technology has its own features with a twenty-four access and the ability to reach anyone within the school community or abroad. Along with the different features of websites, blogs and wikis, there are always a positive and negatives to have one or all. With some districts across the country trying to create their own platform website for parent information, they will be able to ensure the content of school information to be clean and accessible (Sohn, 2011). Tim Sohn writes about how Gilbert Public Schools is allowing teachers to create their websites, which includes interactive tools, third party applications, Community Engagement Dashboard, and the ability to access the sites from any location with an internet access by using Schoolwire Centircity 2. There are teachers who choose to create their own website, blog or wiki without relying on their school district to set up one for them. They put their time and effort with the purpose to communicate outside the classroom with a variety of extended lessons for student and information for parents. They set an example for teaching interactively inside the classroom and outside the classroom.

For the next step, a discussion needs to happen to see if all students are able to have internet access while at home. It was the main assumption that everyone seems to have access since majority of the articles did not touch on this subject with the exception of one. Mary Scroggs of Elementary School in Chapel Hill, NC has set up a program for the families with Bellsouth. It is funded by a grant from Bellsouth to assist families based on income to set up an internet device in their homes (Brown). In 2009, MarketingCharts.com displayed data they have gathered from across the U.S from Nielson Company. 80% of Americans have computers with 92% of them have internet access (MarketCharts, 2009) They did state a growth from 2008 to 2009, which means more American are still buying computers and a percentage of those are getting internet connected into their homes. Therefore, even if school districts are updating to the 21st century with communication, they must still realize that a percentage of students do not have technology access or are limited.

**Implications for Practice**

Since technology is available for open communication to everyone outside of the education world for Kindergarten thru 12th grade, school districts as well as teachers need to be able to use it for their purpose to communicate to parents and students. By keeping the parents up-to-date with important events happening in schools and extending learning outside of the classroom, it is important to use websites, blogs, wikis, or combination of any two. This could help break down barriers between teachers and parents, as well as teachers and students when it comes to opening communication. Parents can become more involved with their student’s education and be aware of homework assignments, class discussion, and/or school events. Students have the potential to improve in their own education and be reading for college.

**Methods**

**Website Expectation Surveys**

**Participants.** 20 teachers and 40 parents took part in the website expectation surveys. Responses were collected from March 29, 2012 to May 26, 2012. Participants were emailed asking for 5 minutes of their time to complete the survey and some of the participants forwarded the email, so additional participants were found based on connections.

**Procedure.** Two surveys were created to gather opinions on the expectations of classroom websites. Each survey link was emailed to participants based on whether they were a teacher of K-12 students or a parent of K-12 students. Each survey asked the participants to identify what was important for all classroom websites to have posted. The survey questions varied based on if the participant was a parent or a teacher.

***Parent survey.*** There were seven selection questions the parents had to answer, with no short answer questions (see figure 1.1). The survey started out by asking for the grade level of the parent’s child and the gender of the parent. It also addressed how often the parents use a computer and visit teacher’s websites. Parents had to check which items they look for on teacher’s websites as well as rank the importance of the items that should be on teacher’s websites.

**Figure 1.1. Parent Expectation Survey Example**

I GO TO TEACHER WEBSITES TO LOOK FOR \*

 daily assignments/homework.

 what my student is learning (standards).

 communication (what is coming up, what to study, teacher background, etc).

 resources (online games, additional links, extra help, etc).

 documents (syllabus, notes, worksheets. etc).

 class expectations.

 student work.

 school events (field trips, PTA meetings, school performance, conferences, etc)

 Other: 

Figure 1.1. Parent Expectation Survey Example. This one question from the survey parents were provided with when gathering data on their expectations of classroom websites.

***Teacher survey.*** There were seven selection questions the teachers were expected to answer, with no short answer questions asked (see Figure 1.2). The teachers had to identify what grade level they taught as well as what type of classroom website they have and the reason for the website. How often the teachers update their website was also asked, followed by having the teachers select what kind of content was on their website. The teachers’ final question asked them to rank what was most important to include on a classroom website, which used the same list as the parent survey.

**Figure 1.2. Teacher Expectation Survey Example**

THE CONTENT ON MY CLASS WEBSITE INCLUDES \*

 communication (what is coming up, what to study, teacher background, contact information, etc).

 daily assignments/homework.

 resources (additional links, educational games, etc).

 documents (syllabus, notes, forms, etc).

 school events (field trips, PTA meetings, school performance, conferences, etc).

 blog about classroom activities.

 class expectations.

 student work.

 what I am currently teaching (standards).

 Other: 

Figure 1.2. Teacher Expectation Survey Example. This is one example of a question from the survey teachers were provided with when gathering data on their expectations of classroom websites.

**Results.** With the execution of the survey, it was difficult to locate participants to take the survey. Since the survey was sent out through email, the survey was forwarded on to unknown participants so there was not an exact number of how many people received the survey link compared to how many took the survey. The surveys were sent out towards the end of the school year so it was difficult to gather teacher responses. Teacher responses were also gathered in a specific area unlike the parent survey where responses were gathered from across the United States.

***Parent results.*** 85% of the parent participants were female, with 15% male. 95% of the participants use a computer multiple times a day, which means that 95% of the participants are computer literate. 35% of the participants go to classroom websites once a week, with 40% of the participants going to the classroom websites once a month. This shows that most parents do not use classroom websites regularly. When parents do go to classroom websites, they are looking for communication (what is coming up, what to study, teacher background, etc.) about daily assignments (the most) and student work and school events (the least). Parents want to see daily assignments and communication on classroom websites, which correlates to their perceived purpose of classroom websites.

***Teacher results.*** Out of the 20 teacher participants, 90% were female with 10% being male. 60% of the teachers surveyed have a website to keep parents and students up to date and 45% of the teachers have a website to keep up with technology. 15% of the teachers update their website daily with 70% who update their classroom website weekly. Based on the rank of importance, 70% of the teachers think communication is the most important thing to have on a classroom website with 55% of the teachers saying that daily assignments is the second most important. Documents were the least important thing to have on a classroom website.

***General results.*** Based on the results from the parent and teacher surveys, classroom website expectations are similar. Most parents check classroom websites once a week while teachers generally update their classroom website once a week. Both parents and teachers feel that communication and daily assignments are important components of classroom websites.

**Website Function**

**Participants.** Four parents and four teachers were asked for 30 minutes of their time via email to participate in the UX research. The participants chose where to conduct the UX research for their convenience, so the environments were different for each participant. Each participant experienced the same interactive PowerPoint presentation, regardless of whether the participant was a parent or teacher.

**Procedure.** For the UX research, three parts were administered using an interactive PowerPoint presentation. The first part focused on classroom website layout, the second part had participants locate particular information using different layouts, and the third part had participants explain their overall impressions of classroom websites. Each part had a corresponding survey, which was created through Google Docs. During the UX research, the participants were recorded using Camtasia to capture audio, visual, and clickstream mouse movements for analysis. The UX research was administered June 20, 2012 through June 28, 2012.

***Part 1: Classroom website layouts.*** The participants were shown five different classroom website homepages for 15 seconds each. After viewing all homepages, the participants were presented with a survey, asking them to rate the layouts based on function, select which layout they would prefer to use, and which layout the did not want to use. The participants had to explain their answers, so their opinions could be better understood.

***Part 2: Daily assignments and homework.*** Within the same interactive PowerPoint presentation, participants were given four different tasks, asking them to locate particular assignments on four different websites. The task was listed at the top of the PowerPoint slide with the associated website embedded below. Participants were timed using the Camtasia video to analyze how long it took them to complete the task as well as the clickstream to find out where their mouse went on the screen. At the end of the four tasks, the participants were asked to complete a survey asking them to rate the different websites based on function, which website layout they preferred using, and which layout they did not prefer to use. The participants were also asked to explain all their answers, using short answer response boxes.

***Part 3: Overall experience.*** For the last part of the UX research, the participants were presented with a survey asking for their overall experience with classroom websites. The survey focused on which layout the participants preferred to use and which layout had the most function. Participants were also asked which layout their students would be able to navigate best. The participants had to choose the most important aspect of functionality with classroom websites based on their experience that day. Participants explained all their answers with short answer boxes and had the ability to leave any additional comments.

**Results.** With the execution of the UX research to four parents and four teachers, audio and visual recordings were made, screen capture of mouse movements were recorded, and overall observations were noted to gather information on the function of classroom websites. For each execution, the participant chose where he or she would be comfortable to conduct the UX research, so some participants had quiet settings in a private home while others were in high distraction, public locations. The participants chose the location to help accommodate their needs since they were volunteering their time with no monetary benefits gained from participating. Throughout the UX research, two participants complained that there were too many words in the directions and they did not want to read. Parent D struggled with using the computer and the integrated PowerPoint, which affected her experience with the classroom websites. Overall, the UX research was a positive experience for both the parents and teachers based on their verbal comments during the research process, because they enjoyed experiencing different types of websites, even if there were a few technical glitches.

***Part 1: Classroom website layout.*** Based on the survey results after the participants experience 15-second screen shots of five different website homepages, parents and teachers have differing opinions on functionality of classroom websites based on their first impressions of the screen shots. 75% of the parents preferred to use the second layout, which was a website with a top and left-hand navigation and 50% of the parents did not prefer to use the third layout, which was a website with left-hand only navigation. These results were skewed based on Subject D choosing the second layout for preferred and not preferred. When parents were asked to rate the five different website layouts based on functionality, the second layout was rated as having the most function while first layout (top and right-hand navigation) was rated as having the least function. 75% of the teachers preferred to use the first layout, which was a blog with top and right-hand navigation and 50% did not prefer to use the second layout and fifth layout, which was a website with top navigation only. When the teachers were asked to rate the different website layouts based on functionality, they said that the first layout had the most function and the third layout had the least function.

With these results, it shows that parents and teachers have different preferences when it comes to attributes of classroom website function. The layout that teachers find that has the most function is the exact opposite of parents, since the teachers first choice is the parents last choice in terms of function. The same occurred with the parents’ first choice for function being the second layout while teachers rated it last in terms of function.

***Part 2: Daily assignments and homework.*** Part 2 directions were the longest set, so some participants just skimmed over the information, which caused some confusion later in the tasks. Since this part of the UX research was the participants’ first encounter with live websites embedded in a PowerPoint, there were technical difficulties that caused frustration on this part for some of the participants and the proctor. Advancing the slides on the interactive PowerPoint should have been explained better since normal PowerPoint shortcuts did not work. More direction was necessary for this part of the research, which would have created more accurate results instead of inflated, frustrated times. Teacher A’s Camtasia video, audio, and screen cast is not available because at the end of her participation, the computer she used crashed. Her survey data was saved, but her times and clickstream data is not included in any of the tasks.

*Task 1.* For task 1, a website with left-hand navigation was used. The participants had to locate the classwork for March 26, 2012. The average time to complete this task was 64.25 seconds, which includes two different participants having technical difficulties, so the time is inflated. One participant had difficulty reading the font on the webpage, which affected his time. Based on the clickstream data gathered from the Camtasia screen casts, all the participants clicked on the link to Daily Agenda on the left-hand side of the webpage, which took them to the class blog. From there, four of the participants immediately clicked on the archive March 2012. The rest of the participants scrolled down the posts. Two of those participants scrolled back up and clicked on the archive March 2012, but the remaining participant used the previous link at the bottom of the page to locate the March 26, 2012 post. The blog style of posting assignments seemed to be difficult to navigate for half the participants, but that may have to do with the familiarity of some participants having navigated a blog before compared to those who do not visit blogs.

*Task 2.* For task 2, participants had to locate what was due on January 23, 2011, using a website with a left-hand navigation. Instead of having one section for all the assignments like task 1’s website, this one had everything broken apart based on the classes taught. The participants had to locate the assignment that was due for TAG Social Studies during fifth period. The average time to complete this task was 56 seconds with no technical difficulties occurring (see Table 1 for participants times). Two of the participants located the calendar link on the left-hand side of the webpage directly below Social Studies TAG Lesson Plans: Periods 5th, 6th, and 7th label. From there, both participants used the back arrows on the Google Calendar to locate January 2011 and the assignment that was due on January 23, 2011.

The rest of the participants clicked on the label, Social Studies TAG Lesson Plans: Periods 5th, 6th, and 7th, where they then clicked on the calendar link at the bottom of the page. Two of the five participants clicked on the miniature calendar to locate January 23, 2011, where the rest of the participants used the back arrows. One participant said the color scheme of the website was distracting and she did not like the website for that reason. With only two participants using the side navigation to the calendar instead of taking the extra clicks to the Social Studies TAG Lesson Plans: Periods 5th, 6th, and 7th homepage, it seems the extra links of the side were not noticed. This could be because the participants had never used a Google Site before or did not notice the extra links because of the color scheme.

*Task 3.* For task 3, the participants were asked to locate the classwork on December 12, 2011, using a blog style website. The navigation was along the right-hand side of the webpage in the form of archives. The average time for completing task 3 was 52.25 seconds, which includes one participant having technical difficulty. When it came to the navigation of the blog, all of the participants but one scrolled down and clicked on the 2011 archive. From there they went directly to December 12, 2011 entry. The participant who did not click on 2011, first clicked on the January archive and from there clicked on the 2011 archive, which led him to the December 12, 2011 post. Since this was the second blog entry assignment style, the quick times might have been from understanding of how the blog works or the simple design of it only being blog instead of a website with a blog built into it could clarify the fast times. Either way, this was second fastest task time, with the fourth task being the fastest time.

*Task 4*. In task 4, the participants were presented with a blog style website, but the assignments were listed in a Google calendar using different pages along the top of the blog. The participants were asked to locate the homework on March 1, 2012 for Math 8A. No one had technical difficulties, with an average time of completion being 47.25 seconds. Four of the participants started out by scrolling down the blog, but then realized that the posts were not assignments, but class updates. They then went back to the top and located the Math 8A calendar. Those that did not scroll down the blog immediately located the calendar and proceeded to find the homework. Five of the participants used the back arrow on the calendar, while the other two used the miniature calendar to locate March. The two participants who used the miniature calendar were the same participants who used it for task 2. Those two participants could be more familiar with Google calendar than the other participants are or it is just preference. The Math 8A calendar label used a small font, so this could account for four of the participants not seeing it at first.

*Survey results.* Once all the tasks were completed accurately, the participants took part in a survey about their experience interacting with the different assignment layouts and website types. The parents preferred to use a calendar style website to display daily assignments and homework and did not prefer to use a blog style. When asked to rate the different websites based on function, the second task website was rated the highest, which was a website with left-hand navigation with a Google calendar used to display the assignments. The parents rated the fourth task the lowest in terms of function, which was the blog with a Google calendar used to display assignments.

The teachers preferred to use a combination of a blog and calendar style for posting daily assignments and homework. Half of the teachers did not prefer the blog style and the other half did not prefer the calendar. When the teachers were told to rate the different task websites, the third (blog style) and fourth (blog with Google calendar) task were rated the highest, with the second website (left-hand navigation website with Google calendar) the lowest. This is the opposite of the parents’ ratings. Since the teachers preferred the last two task websites the most, it might have to do with the teachers’ comfort level rising as the tasks reached completion.

**Table 1: Participant Times for Part 2**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Task 1 | Task 2 | Task 3 | Task 4 |
| Parent B | 1 minute, 30 seconds | 35 seconds | 1 minute, 14 seconds | 55 seconds |
| Parent D | 1 minute, 57 seconds\* | 2 minutes, 9 seconds | 2 minutes, 15 seconds\* | 1 minute, 23 seconds |
| Parent J | 45 seconds | 46 seconds | 47 seconds | 1 minute, 58 seconds |
| Parent T | 32 seconds | 37 seconds | 32 seconds | 21 seconds |
| Teacher A | No time available | No time available | No time available | No time available |
| Teacher C | 1 minute, 19 seconds | 49 seconds | 56 seconds | 36 seconds |
| Teacher E | 26 seconds | 1 minute, 18 seconds | 43 seconds | 34 seconds |
| Teacher G | 2 minutes, 5 seconds\* | 1 minute, 14 seconds | 31 seconds | 31 seconds |
| Total Time | 514 seconds | 448 seconds | 418 seconds | 378 seconds |
| Average Time | 64.25 seconds\* | 56 seconds | 52.25 seconds\* | 47.25 seconds |

Table 1: Participants Times for Part 2. These times represent the times it took to complete Part 2 of the UX research. Participants who had technical difficulties are indicated by an asterix.

***Part 3: Overall experience.*** For the third and final part of the UX research, the participants were asked to complete a survey that pulled all the different layouts and assignment posting types together to gather any final thoughts or opinions. When asked, 100% of the parents said they preferred top navigation and 67% thought their students would also prefer top navigation. The parents stated the most important aspect to classroom website function was easy navigation.

75% of the teachers stated that they preferred side navigation and the exact same teachers said their students would also prefer side navigation. Since the three same teachers said their preference were the same as their students, those teachers might be looking out for their students’ needs instead of their own. The teachers said the most important aspect to classroom website function was easy navigation, which is what the parents said. Parent and teacher needs might be different and their preferences different, but they all 100% agree that easy navigation is important to the function of classroom websites.

**Conclusion**

Through the completion of the initial survey and all of the components that made up the UX research project, the function of classroom websites was investigated. The most important function of classroom websites was identified as keeping parents and students up to date on daily assignments and homework as well as communication in general. In terms of what makes a functional website, both parents and teachers agree that the key to a functional classroom website is easy navigation. However, parents and teachers disagree on what type of navigation is best. Parents prefer top navigation with a calendar to display all assignments while teachers prefer side navigation with both a blog and calendar to display assignments. Both parents and teachers believe that their students would prefer what they want. This leads to determining who the audience of a classroom website is: parents, teachers, students, or a combination? The answer to this question was not addressed in this research.

Another aspect towards the function of classroom websites is the design. Based on the verbal and written comments expressed by both parents and teachers, some of the websites used in the research were not functional because of font size, color choice, and overall busyness of the website. With these comments, it cannot be determined if any of the participants rated the websites based on the design or the function. Further investigation needs to be done to determine if design plays a part in the function of classroom websites.

**Implications**

With this research on classroom website functionality, it can be directly applied to any middle school teacher’s website in the Metro Atlanta area. Before the research can be applied, teachers need to decide who the audience of their website is and from there decide the best layout. If the audience is the parent, then a top navigation website with a calendar for posting assignments is optimal. However, if the audience is the student, then the teachers need to think about what their students would like. The most important thing is that the website is easy to navigate with a clean design concept.

Even if the teachers do not work in the Metro Atlanta area or teach middle school, the implications from the research can still be applied to a wide genre of classroom websites and educational websites. The key piece of information that was discovered through the research is that easy navigation determines how well the website functions. Analyzing the navigation of a website before making it live would ensure that more people can find the information they are looking for, so then they will become return visitors. Besides the overall navigation of a website, the navigation of the individual pages needs to be analyzed with all links clearly organized and legible for all visitors. Once the navigation is determined, then the design and style can be added to the website.

With the preference of using a calendar to list the daily assignments and homework, website creators can use this information when posting upcoming dates, events, or sales. Most websites all have the same general purpose, to decimate information to consumers on the Internet, so creating a calendar listing can help generate more business. Overall, remembering to keep the navigation simple is the key to any functional website.

**Limitations**

This UX research project was conducted in a three-month time span, so it was not an exhaustive research project. Due to the limited time frame and the lack of availability of participants because of summer vacation, only eight people participated in the research. If there was more time, more participants from varying backgrounds, educations, and locations would have been used to make sure a wide variety of participants were tested, which would lead to more accurate results. Since the population of participants all came from the Metro Atlanta area, these results can only be applied to classroom websites that are hosted in Metro Atlanta.

Besides the time frame, this research was based on middle school websites, even though not all the participants had middle school students. If more types of websites were found that encompassed all grade levels, then the research could apply to all classroom websites. However, the results can only apply to middle school classroom websites. If the research were to be done again, more participants, more time, and a wider range of classroom websites would be used so the results could apply to a larger audience.

**Reflection**

**Deviations**

From the time the capstone proposal was written at the beginning of March, there were some changes made through the execution of the capstone project. The original purpose of the capstone project was to conduct research on the effectiveness of classroom websites. However, once the project started, it became unclear what “effectiveness” meant, so the research was changed to the function of classroom websites. Function was chosen because it could be defined as how the website was used, in terms of why people visit the website and how they navigated the website. With the change to function, the initial surveys were also changed. The original proposal stated that parents and teachers would be surveyed on their needs for classroom websites, but the surveys that went out actually asked about their wants in a classroom website. Wants was chosen over needs because the idea of a parent or teacher needing something on a website did not sound right. Parents and teachers can express their wants in a classroom website, because if those wants are not met, the websites will still be able to function without them being met.

In terms of the mini literature reviews, the proposal said they would be over how classroom websites should be used. However, that particular topic was too broad, so one mini literature review was completed on how UX research can be used on websites and the second mini literature review was completed on communication in education. Both of these topics combined strengthened the capstone project by covering all the necessary topics needed to begin the research process, where the original topic would not have been enough to successfully fulfill the requirements of the project.

The last deviation made from the proposal was the time frame in which the capstone project would be completed. The original plan had most of the work being done in April and May. However, with pressures from the end of the school year and the workload from classes, the bulk of the project was completed in June and July. The initial surveys were created in March, but responses were still being gathered through the end of May. This caused the results to be analyzed in June and the UX research to be created and conducted in June as well. Besides the initial surveys going out on time, the mini literature reviews were also created according to the capstone proposal. Even though most of the time line was shifted by one or two months and there were some deviations from the original proposal, the capstone project was completed successfully.

**Self-Evaluations**

**Whitney Beem.** Through the completion of this research project, I learned a great deal about technology facilitation. It is important for a technology facilitator to understand that not everyone has the same view of how technology should be used and some people use technology in such a way that it does not enhance learning. When this happens, a technology facilitator should be able to locate the disconnect and find a solution where everyone can see data that shows how the technology should be used. With this research, I learned how to identify a need (classroom website function) and conduct research to produce results that support the best use for classroom websites (communication with easy navigation). A technology facilitator needs to be able to produce a final product that demonstrates their knowledge and can persuade groups of educators who might be resistant. Using leadership skills gained through this experience, I am not able to write a persuasive report that details the research process and results in such a way that it demonstrates my knowledge and helps others to believe that they might have to change their ways to enhance the learning of all students outside of school.

A technology facilitator needs to have the knowledge on how to communicate with teachers and administration. Throughout this project, I have expanded my knowledge of communication with the ability to create and write a research report that has the sole purpose of helping my colleagues stay current on the function of classroom websites. With this newfound knowledge, my skills have also improved in the same area of communication. Having the ability to write results in such a manner that people can learn and alter their technology decisions is important if a technology facilitator wants to be effective in his/her role. The deepened knowledge and strengthened skills also lead to my disposition and belief towards lifelong learning becoming more of an important aspect to my career. I have always been interested in lifelong learning, but now that I have participated in creating a research project from start to finish, I can see the value in research being conducted regularly since perceptions are constantly changing. Being able to stay abreast of the current knowledge on technology in education is important so I can fully understand how to better serve my students and colleagues by leading the way in the appropriate uses of technology to enhance student achievement.

The advice I would give to anyone who would tackle a research capstone project would be to stay organized and be detail orientated. Without organization, the project never would have been completed. Using Google Docs to communicate with my partner was extremely important so we could always know what the other person had done and make a decision on what needed to be completed next. Having a mind for detail is also important because without providing detail, the results could not accurately be described to those people who are unaware of what took place. Details and organization need to be the focus of any research capstone project, especially if everything is to be accomplished within a tight time period.

When conducting research on websites in education, I would recommend locating a wide variety of websites to use. Providing a wide variety of websites in the research can help to make the results more applicable to all educators instead of a small group. It can be difficult to locate educational websites since so many exist, so using clear search terms and locating school websites that link their teachers’ websites to them is a great way to locate those websites that are paving the way for creating learning environments for their students to partake in while at home. Narrowing the search down to a particular grade range is also important when trying to locate websites to use. Overall, having a clear plan will help anyone design and implement an effective research project that can benefit teachers and especially students in a positive manner.

**April Booe-Fell.** When conducting any type of research, having a plan or course of action is important as well as a back-up plan if an event occurs that can throw off the original time frame. This event did occur and the original plan had to be altered to examine a wider spectrum of websites. The main focus did remain the same of completing the study of user experience. This study did take time to understand the definition of user experience and how it can be used to better educate teachers on how to create an effective but simple website for parents and students to view and navigate. By surveying the parents and teachers on their experiences, their opinions can be used to create a communication of the types of information that needs to appear on teacher websites. This can reflect the basic criteria of information needed on teacher websites for schools, districts or statewide for elementary, middle, and high school level.

By acknowledging the communication gap between parents and teachers with the use of websites as the form technology, technology facilitators or leaders can examine the effectiveness of websites presently and try to find ways for teachers to use websites to the fullest potential for communication purposes. Professional developments can be created for the basic structure of a website, the communicative use, importance of simple navigation, and acknowledging the intended audience. Technology facilitators or leaders need to demonstrate their ability to conduct these types of professional development by viewing effective teacher websites, testing functionality of design, and the navigation of the website. Any added features of the websites such as blogging or embedding a calendar need to be tested to see if appeal to the parents and students as well as keeping these functions up-to-date.

For any student who wishes to conduct a similar research on user experience of websites, he/she need a testing group or survey group of teachers and parents. The more data that can be analyzed, the greater quality of results can determine as to what qualifies as an effective, functional website. The results can help to determine any gaps of what qualifies as a user-friendly website between teachers and parents. With the results of this study, there was a definite gap between the parents and teachers based on the results of the survey to determine the best layout for function of a website and navigation of four different layouts of websites. With more participants, could the gap based on function and navigation, be the same or smaller? Are there better websites from other districts or states for teachers and parents to agree with the effectiveness based on the function of the layout and simple navigation? Would parents and teachers know the difference between a website intended for elementary, middle or high school? There still is a need for this type of study to continue on to get a better understanding on user experience in the educational technology field.

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