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COMPUTER MEDIATED PARENT-TEACHER COMMUNICATION LA COMUNICACIÓN ENTRE PADRE-MAESTRO MEDIADA POR COMPUTADORA

Susana Juniu¹

Abstract: Parent-teacher communication is crucial to children's education. The literature reveals that parents' involvement in their children's education improves outcomes in areas such as learning, attendance, behavior, and graduation rates. Increased and meaningful communication between home and school is likely to enhance parent involvement and may consequently support students' learning. Schools are using various forms of technology to increase school/home communication, including voice mail, e-mail, school and classroom websites, and web access to individual student information such as attendance, grades, and student portfolios; however, this use is not consistent or widespread. This paper examines the most prevalent parent-teacher communication in a K-12 educational setting and explores various communication options to improve parent-teacher communication. The focus is to examine the communication needs between teacher and parents and the benefits of combining traditional synchronous and asynchronous communication with newer communication technologies to meet these needs.

Keywords: COMPUTER MEDIATED COMMUNICATION, SCHOOLS, PARENT-SCHOOL RELATIONSHIP

Resumen: La comunicación entre padres y maestros es crucial para la educación de los niños. La literatura revela que la participación de los padres en la educación de sus hijos mejora los resultados en áreas como el aprendizaje, asistencia, conducta, y en las tasas de graduación. Una comunicación efectiva entre la familia y la escuela aumenta la participación de los padres en la educación de sus niños y consecuentemente mejora el aprendizaje de los estudiantes. Las instituciones educativas están utilizando diversas formas de tecnología para incrementar la comunicación familia-escuela, entre ellas están el buzón de voz, el correo electrónico, páginas Web de las escuelas con acceso a la información personal de cada estudiante (asistencia, calificaciones, y actividades escolares). No obstante, este uso no es consistente o masivo. Este ensayo examina las necesidades de comunicación entre los maestros y los padres y los beneficios de combinar comunicación tradicional, sincrónica (tiempo real) y asincrónica (con retraso), utilizando nuevas tecnologías de comunicación para satisfacer estas necesidades.

Palabras clave: COMUNICACIÓN MEDIADA POR COMPUTADORAS, ESCUELAS, RELACIÓN FAMILIA-ESCUELA

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1. Introduction

Existing research has shown that effective communication between teachers and parents requires open contacts between schools and families. Parents and teacher collaboration, active communication, and involvement are positively related to students' success in school in that students tend to perform better, attend school more regularly, and have better behavior and more positive attitudes toward school (Kasprowicz, 2002; National Parent Teaching Association - PTA report).

It is also clear that increased and meaningful communication between home and school enhances parental involvement and encourages home-based reinforcement of school behavior. Unfortunately, parents' involvement is not always perpetuated efficiently resulting in children failing classes and having to repeat an entire grade in K-6. A number of limitations affect parent's involvement (Nelms, 2002) and inhibit communication; they include factors such as poor school-home interaction, lack of or poor parental skills, lack of time and preparation, distance from schools, and/or restricted modes of communication among others. According to Gurdían Fernández (2001), the economic differences between countries from the North and from the South should be also considered when considering the use of technology-based communication tools in the education realm. Some of the concepts that will be presented in this article must be applied and incorporated according to the realities of each educational setting.

Consequently, in order to achieve good and healthy communication between teachers and parents, four elements should be present: (a) positive communication including encouraging messages from teacher to parents. (b) personalized communication, letters or feedback on students' work, (c) proactive communication, and (d) partnership and collaboration between teacher and parent. This paper examines the most prevalent parent-teacher communication in a K-12 educational setting and explores various communication options to improve parent-teacher communication. The focus is to analyze the communication needs between teacher and parents and the benefits of combining traditional synchronous and asynchronous communication with newer communication technologies to meet these needs.

2. Communication Needs and Computer Mediated Communication (CMC)

Effectively educating a child does not only involve the teacher and the student, nor does it only involve academic study. This process is a community effort, involving the teacher,

parents, and the child (Kasprowicz, 2002). Oftentimes debates over the state of education do not focus on the responsibility or input of parents, but nonetheless, their value is undeniable. Most educators would agree that academic development is important to the future success of a child. Students need to feel connected to their environment and education in order to reach their full potential (Rich, 2006). "Students whose parents are actively involved in their learning are more likely to be successful in school" (Lunenburg & Irby, 2002). Students whose parents are more involved with their education tend to complete homework more regularly, score better on tests and demonstrate positive attitudes toward school in general (Freytag, 2001). Parents tend to communicate with schools more frequently when they are involved in their child's education. However, the concept of "shared responsibility" does not only apply to parents, but to schools as well; share responsibility is required to provide paths of communication and involvement (Epstein, 1996).

The use of computer technology has the potential to support home-school communication and consequently alleviating some of the communication challenges and barriers of time and distance that teachers and parents may face. Computer mediated communications (CMC) tools such as videoconferencing, phone conferencing, online chats, and emails are effective mediums to enhance school/home communication and provide a way for teachers, parents, and students to stay connected and informed, encouraging ongoing communication (Perkins & Pfaffman, 2006.). Parents with access to the Internet find it a more convenient and a less disruptive method of communication with the teacher (Merkley, Schmidt, Dirksen, & Fulher, 2006). Parents are beginning to use websites for daily updates about their children's performance. For some parents, using e-mail technology also offers easier ways to communicate and provides more options that may not be possible with other traditional technologies such as the telephone (Blanchard, 1998).

The use of CMC tools by schools and teachers facilitate communication for parents, as they do not have to interrupt their workday to phone a teacher or attend a conference (Beverly, 2003). It is up to the schools to open the paths of communication with parents. Parents feel that the number one need from school-home communication is getting information regarding their child's progress (Freytag, 2001). According to Beverly (2003) and Kasprowicz (2002), for parents it is difficult to get information from their uncommunicative children about what happened during school. Therefore, with increasing internet access, parents are beginning to rely more on these online sites for daily updates about their child's grades, attendance, and homework (Fusco, 2004; Meyer, 2000; Weinstein, 2005).

There are occasions in which teachers and parents need to engage in a dialogue and may engage in an online chat maintaining the spontaneity and motivational component of a face-to-face interaction. But not all the parents get the benefits from new technologies in communication with schools. Nelms (2002) examined uses of web pages for communication purposes in elementary school parents. Lack of computer access or lack of knowledge of navigating the Internet, and a low level of interest in the new form of communication are some of the main barriers to online participation. Physical access is essential to enhance teacher-parent communication, but parents' training and motivation also plays an important role.

Educators should take into consideration the many interactions between a person's characteristics, task, environment, and communication technology features when selecting the appropriate tool for communication (Zhao, Alvarez-Torres, Smith, & Tan, 2004). The nature of the communication requires specific features in the technology to meet the goal of the message so that more modalities facilitate and support teacher-parent dialogue. For instance, the best technology to support teacher-parent conversation may include text-based and instant messaging and the use of tools that are more personalized to encourage engagement.

Before selecting the appropriate CMC tool for communication purposes, the teachers must answer the following questions: (a) What is the nature of the message? Does it require: private communication, collaboration, or dissemination? (b) What type of technology do parents and teachers have access to? (c) What are their technology literacy skills? And (d) Will the CMC substitute traditional communication means or will it complement offline communication? Other factors such identity, frequency of communication, and flow, have an influence in the selection of the communication tool. For example, e-mail could be used when the interaction modality is asynchronous (i.e. the communication is not at the same time). There will be occasions in which teachers and parents may need to engage in a synchronous (i.e. simultaneously) dialogue. This conversation may also include a chat modality with an audio and text component. Synchronous chat discussions are more spontaneous and more motivating (Newlin & Wang, 2002 as cited in Merkley, Schmidt, Dirksen, & Fulher, 2006). Table 1 summarizes the various communication factors that will determine the type of technological tool use to meet the communication need.

Table 1
Communication factors

Nature of the Communication	Temporality	Identity	Modality	Communication Flow	Frequency	Technological Tool
Collaboration/ Sharing	Synchronous/ Asynchronous	Anonymous/ Non	Text/ Graphic/	Many to Many/ One to Many/	Every Day/ Once a Wk/	Email/Online Calendar/
Work/Dialogue/ Interaction/ Dissemination of Information		Anonymous	Video/ Audio	One to One	Once a Month/ As needed	IM/Video Conference/Web

Another important element is to consider the degree of seriousness of the problems that may require immediate attention and/or solutions. This type of communication may be accomplished using tools that create a sense of immediacy and copresence. These are aspects that are likely to make the interaction in a face-to-face communication more productive and sometimes preferred. Social support is an immediacy behavior that enhances perceptions of closeness to others (Pelowski, Frissell, Cabral, and Yu, 2005). Certain technologies therefore will support the perception of closeness between the teacher and the parent. Electronic interaction has a mix of distance and closeness, proximity and separation – presence and absence. For this, tools such as instant messaging may help teachers and parents emulate this environment by creating a technological state of copresence.

For the purpose of this article discussion, 5 combined needs were identified: (a) disseminate information about school events and activities, (b) disseminate information about course content, (c) disseminate student's continuous progress reports and engage in conversation with parents about student academic progress, (d) engage in ongoing conversations with parents about student behavior in class, and (e) make resources available about overall child well being. We will examine the communication needs between teacher and parents and the benefits of combining traditional synchronous and asynchronous communication with newer communication technologies to meet these needs.

2.1 Disseminate information about school events and activities

Keeping parents informed of school events and activities is an important opportunity to involve them in their children's education. Schools are likely to provide parents with calendars of school events at the beginning of the school year but in order to encourage

parents' engagement with the school events, teachers should not only inform them of date events, but also highlight the importance and potential benefits of specific events that may be of interest to the parents considering the based-grade level of the student or the subject matter of the class. In this way, parents are not bombarded with a comprehensive schedule in which half of the events may not even be applicable to their needs. Additionally, teachers can send reminders to parents about these events as the date draws near, further encourage attendance, and provide insight as to why a particular event is especially beneficial. This will help to keep event dates fresh in the minds of parents and to assure parents that their input and involvement is both necessary and welcome (Anderson, Hicock, & McClellan, 2000).

One of the best ways for teachers to organize this information and share it with parents is through online calendars or a web-based content management system (Starkman, 2006). Online calendars allow teachers to insert dates and notes about events into a calendar tool and send e-mails to parents with the date and synopsis of each event. Teachers can insert the event information once and set a schedule for all reminder e-mails at the same time. Thus, the only time a teacher would need to log in after the initial set up would be to either add a new event or alter the information on an existing event. A tool like this would still be time and energy efficient, as the updated event information would be sent to all parents at the click of a button (Starkman).

This type of communication is public and asynchronous. The information is disseminated from the teacher to the many parents of the class and the information is best presented using text and graphics.

2.2 Disseminate information about course content

Teachers also communicate with parents to keep them informed on their children's learning progress. For example, they could share the course content, the course syllabus with a timeline including assignments and tests' due dates as well as some brief introductory information on each topic.

The content of the course could be disseminated at the beginning of the school year, or intermittently as each topic comes up. Thus, parents can plan in advance and better guide and assist their children with homework in order to understand the material and to meet class requirements. In this way, parents are able to take a more active role in their children's education and in providing a learning environment beyond the classroom.

The best tool to distribute course content is through web pages. The use of teacher-created web pages communication tool between the parent and teacher is a good option to link the school and the home (Starr, 2000) and is likely to strengthen this relationship (Babcock & Backlund, 2001). These are "virtual bridges" that foster communication, cooperation, and community among the schools' parents, teachers, and students. Teachers can build a web page that provides an overview of the course layout at a glance. Research shows that the use of class web pages has a positive impact on students' school performance, including less missed work and higher-grade averages. Parents feel that web pages provide better communication with the school and that they are useful sources of information to help keep parents informed about their child's educational experiences on a continuous basis (Nelms, 2002). If websites contain relevant content, parent are likely to take a more active role in their child's academic life (Lunts, 2003). In addition, posting course content online eliminates the possibility that a paper containing an important assignment would be misplaced. It is virtually impossible to lose an Internet page (Perkins & Pfaffman, 2006).

2.3 Disseminate students report on academic progress

This communication need allows parents to monitor the children academic performance in school. Too often, parents are unaware of their children's academic performance until the end of the term or when a report card is issued. Parents as well as the students can review the progress report online by logging into the school website with an assigned username and password. These reports include grades (individual and average), attendance, and comments to students and parents and is by term, subject, or any other format.

Online grading also encourages parents' involvement, enhances student motivation, and consequently improves students' academic achievement. An option is to provide weekly progress reports in which parents are notified of any absences, missing homework assignment, class participation, as well as any grades received on projects or tests. The format of these reports can vary. For example, updates can be provided in score and ranking (percentile), they can be listed with prior grades to see any increase or decrease in academic performance. For parents' better understanding, grades can also be shown as graphs. Only teachers can record the progress updates, and only a student and the parents, after logging into the website by entering password, can read them. Teachers or a system manager would send an email notification to parents saying that progress reports are updated. Progress

updates should be maintained under strict authority, clear identity and secure privacy. The best technology to support this communication need is an online grading system. A grading system has the capability to improve "the automation of data gathering and analysis on student performance making the availability of individualized information less time-consuming" (Osteen, 2005).

2.4 Engage in conversations about student behavior in class

Communication between teachers and parents also includes the need to engage in conversation about student behavior in class. The purpose is for teachers and parents to have an opportunity to dialogue and collaborate on students' issues that may require immediate attention and/or solutions. For example, parents may need supportive feedback and encouragement about their children (unhappiness, loneliness, lack of friends, and socio emotional development) while teacher may need to address concerns about a student's class social behavior. These needs could be met by providing opportunities of synchronous and asynchronous formal and informal dialogues where both parties share concerns. The beauty of an asynchronous discussion is that the participants are provided an opportunity to think about the situation and their comments before constructing a response. This allows both parties to gain a greater understanding of the situation at hand, and possibly avoid unnecessary altercations (Zhao, 2004), which can only impede future effective communication.

School-home communication that utilizes computer technology is effective in the management of many student behaviors (Williams, 2006). For example, tools such as videoconferencing, phone conferencing, and face-to-face meetings are effective mediums to reduce the frequency and severity of problem behaviors in teenagers with epilepsy (Glueckauf et al., 2002).

The parent or teacher may initiate informal interactions depending on the need to communicate; therefore the teacher and the parent share the same responsibilities and are at the same level in terms of their role in the communication process. The communication it is a one-to-one transaction within the context of maintaining a conversation about one student. If the social behavior of a student/s relates impacts on the behavior of another student the communication becomes teacher to parents or parent to teacher and parent.

The communication could be primarily text-based when the interaction modality is asynchronous with the option to voice communication. If the communication is of a personal

nature, the parent may feel more comfortable discussing the situation via written communication because it provides a screen to hide emotions and intense reactions. The access to communication is based on need and it may happen once a week or every two weeks depending on the necessity. The communication will not be anonymous since the communication in most cases will be related to a given student; therefore, most of the time this interaction will be private between the participating parties. Only the parent or parents and or teacher can post and view messages.

The teacher may use e-mail to convey serious and personal information to parents. It is also important that in other instances, the use of other technologies that support real time interaction may help to attend to the problem immediately. Since the spatial distance between individuals determines the quality and quantity of stimulation that is exchanged, some tools such as instant messaging will be the preferable mode of communication, as it provides immediate feedback. These tools allow the user to keep logs of discussion for later reference. E-mail, an asynchronous communication tool, could also add to the interaction between parents and teachers.

2.5 Make resources available about overall child well being

Another communication need for teachers is to make resources available about overall child well being. Oftentimes, parents rely on the school to provide general information such as a phone number to a neighborhood medical office or a resource a parent can access which will provide a needy student with a free pair of glasses, rather than just getting academic support. For example, the teacher may be the first person to notice or discuss an emotional and/or health issue concerning a child.

While the primary purpose of the communication is to disseminate information, it can also lead to increased dialogue or collaboration between the teacher and parent about the child's well being. The focus of this communication is to develop or build upon a relationship of trust between parents and teachers by the teacher providing necessary resources to parents. When implemented effectively, this communication will improve the overall health (social, medical, psychological, academic) of the student (Rich, 2006).

Increasingly, parents have access to various communication tools that provide an important opportunity to increase parent-teacher communication (Davenport & Eib, 2004). The best technology to support the endeavor of offering resources to parents is a class or school web page that provides links, allowing parents and teachers to engage in a primarily

asynchronous, and sometimes synchronous, discussion. The use of this communication tool would circumvent the difficulty of increased teacher workload and time constraints (Nelms, 2002) and provide an efficient method of discussion for parents and teachers (Bender, 2005). This is an effective method to attain the necessary communication (Boden & Molotch, 1994) when the face-to-face transactions are hard to attain. In many schools, language is often a deterrent to parent-teacher communication (Davenport & Eib, 2004). Parents of English language learners may have a difficulty in communicating with teachers if the school does not provide translation services. This obstacle can be overcome by the use of communication tools that have electronic language translators to convert text in different languages.

The nature of this type of communication is one to one if the situation calls for privacy. However, if the teacher is relaying information about a resource, such as an opportunity for free medical care, it can be one (teacher) to many (parents). If the content of the communication is personal, then only the teacher and the parent(s) involved will have access to the information. The dissemination of information can be asynchronous, synchronous, and/or face-to-face. The information the teacher provides can be delivered at any time in any format at the discretion of both the teacher and parents. Generally, the information can be disseminated on an "as needed" basis.

3. Tools to support Parent-Teacher Communication

The following section describes the different tools suggested as mediums to support the communication needs between teacher and parents:

3.1 Online Calendar

The online calendar tool supports teachers when they need to disseminate information about school events and activities. First, it offers custom categories for calendars. This means that calendars can be customized to include color-coded event activities. Creating custom categories allows parents to easily search and view for the events relevant to them, for example the PTA calendar or the third-grade field trip schedule. Events can be viewed and printed by day, week, month, or year. Secondly, the online calendars support automated event notification in which teachers can schedule when reminder e-mails for events are sent. Additionally, each time an event is updated and an e-mail is automatically sent to parents and other subscribers. Some online calendars allow updating events using the cell phone. These features reduce the amount of time teachers need to spend on administrative-type duties and

keep parents informed. Another benefit of online calendar is that parents can choose to have e-mails of the day's events sent to them on a daily basis. Third, these calendars can be synchronized with other technologies that parents may already use, such as Outlook or PDAs.

Not only would teachers save time throughout the semester, but many calendars provide robust options for repeating events. For example, events can be repeated daily, weekly, monthly, yearly, by day of the week, or by date. In addition, events can be repeated on certain multiple days of the week or every other week. For events that are on a set schedule, for example, the PTA meeting that occurs on the first Thursday of each month, this is another great time saving feature that can save time for teachers even year-to-year. Most of the information from previously entered events will be carried over and may only need to be tweaked for the current year, rather than re-entered altogether.

Also, because this is a web-based system, calendars can be checked from any location where Internet access is available. A nice feature of online calendars that supports dissemination of school events and class content is that each website user has their own personalized calendar and check the calendar for updates anytime and anywhere (Lopez, 2005). Furthermore, if Online Calendars (i.e. Yahoo Calendar or already build in Management Systems) are in use at other schools, parents with children in different schools can combine all of their relevant events into one calendar. This helps to reduce electronic clutter and aides in parents' planning.

3.2 Online Grading

Online grading tools supports the dissemination of students' progress reports. The online grading tool can be integrated into existing class management system or school web site. The tool allows teachers to manage grades mostly in text format and allows parents to check the grade by simply logging in to the website. Teachers must give permissions to parents by assigning a username and a password. In this way, only authorized persons can see the student's grades and teachers can verify when parents have checked their children's grades. The online grade can include attendance, homework completion, and test score as the teacher chooses. By using this tool, teachers can easily manage grades and report to school administrators and district. Furthermore, one time-saving feature of this module is that the data can be automatically calculated and analyzed. Websites such SchoolFusion or Engrade are robust website creation and content management tools that include these

features as part of the application package. These web tools provide school administrators, teachers, parents and students real-time online class information including communication, class management, assignment calendar, messaging, attendance book, and gradebook. Because they are web-based application systems that use Active Server Pages (ASP), no special software or hardware is needed by schools to use the technology. SchoolFusion or Engrade are a school-focused solution that can host and maintain the site, which helps to reduce the costs associated with website hosting such as hardware, software, and support. Rather than simply making-do with a mix up of general-use software, these software supports many aspects of electronic school communication, allowing information to be seamlessly integrated. With ease-of-use design and an accessible and knowledgeable support system, schools and parents can focus more on students and the information needed to help them succeed.

3.3 Email

The purpose of email is to maintain a dialogue between teachers and parents. The main functions of e-mail technology are composing, sending, retrieving, and forwarding e-mail. This technology allows the teachers and parents to keep a list of important e-mail addresses and messages. All of these functions support the correspondence between families and schools. E-mail is an asynchronous communication. This type of interaction does not allow parties to respond and receive messages at the same time. Parents can talk openly with their child's teacher through e-mail without waiting for office hours that may not be convenient for parents or teachers. The communication is one-to-one or one-to-many. For example, the teacher may need to communicate with parents on a one-to-one basis or to various parents at the same time. The teacher and parents are the only individuals who get to view the e-mail messages, and they communicate as needed. E-mail supports text messages and file attachments including images and audio files.

3.4 Chat

The chat feature meets the teachers and parents need to engage in conversations about students' behavior in class and for teachers to make resources available about overall child well being. This feature has the ability to host groups as well as individual sessions between a teacher and parent. Teachers only, through either appointment or spontaneity, initiate the live text-based chat feature. When the teacher initiates the chat each member of

the group or individual is invited via e-mail. Invited members go to the class website, log in, and access the chat room. When the chat is scheduled for a future date, all invited members receive reminder e-mail prior to the chat. The main purpose of the chat is to maintain a dialogue and to collaborate between teachers and parents. IM allows users to have instant, live, text-based chats with others over the Internet. This tool allows the users, teachers and parents, to maintain synchronous audio, visual, and textual conversations and exchange private messages in real time.

Another feature of the chat is file transfer capabilities. The user can send and receive computer files to review for the issue in discussion. The tool allows for a hierarchy of permissions to share files and information. For example, the teacher or parent can choose who they want to talk to. The type of conversations are various as this tool permits individual private conversation such as one to one or more public including many to many conversations. This feature is most important because many parents are not able to get into school for a face to face meeting with their child's teacher, the chat feature allows the parents to create a dialogue with the teacher and to truly feel actively involved in their child's education progress.

The main purpose of instant messaging (IM) is to maintain a dialogue and to collaborate between teachers and parents. IM allows users to have instant, live, text-based "chats" with others over the Internet. This tool allows the users (teachers and parents) to maintain synchronous audio, visual, and textual conversations and exchange private messages in real time. Another feature of IM is file transfer. The user can send and receive computer files to review the issue in discussion.

3.5 Webpage

Webpages are tools that allow teachers to post essential text-based information for parent access on a teacher created webpage that parents can access from any location. Use of this tool will allow parents to stay up to date on academic information as previously mentioned, but they could have access to other important information as well. For instance, a teacher can post a link allowing parents to access information about an organization offering free student immunizations or other health care. This tool primarily supports two needs: dissemination of course content and making resources available about overall child well being. This is information that generally does not come home when the paper method is used. When it does make it into the home, the paper is often misplaced and rendered

useless. The efficiency of having the information on a web page is that the parent can access it continuously until the date of the event has expired. While parents are unable to post information for others to access on the web page, if necessary, they are able to send an email to the teacher in response to information posted. In addition, parents can send resource information to the teacher and ask the teacher to share the information with the other parents.

4. Conclusion

As previously discussed, using CMC communication provides a way for teachers, parents, and students to stay connected and informed, and encourages ongoing communication (Perkins & Pfaffman, 2006, p. 37). Communication between parents and teachers works best when it is convenient and timely for both parties (Goldberg, 2002). Often, when teachers have the time to contact parents, parents are unavailable. Likewise, parents may not be able to contact the teacher during the day, because the teacher is unavailable for discussion while teaching or the parent does not have time in his or her work schedule for extended, sometimes confidential, discussions. Therefore, using CMC as opposed to traditional communication means provides an opportunity for both parents and teachers to communicate whenever the need arises and to disseminate information quickly and efficiently.

Communication among parents and teachers is an essential component needed to provide a child with a quality education. Parent-teacher collaboration, active communication, and involvement are positively related to students' success in school. Thus the nature of the message, type of information to be shared, family access to technology, the school capacity using technology with parents, and the communication between parents and teachers could take different modes. Table 2 summarizes the communication needs, purposes, characteristics, and appropriate technological tool for each need.

Table 2
Purpose of the Communication Needs and Appropriate Technological Tools

Communication Needs	Nature of the Communication	Temporality	Identity	Modality	Communication Flow	Frequency	Technological Tool
Disseminate information about school events and activities	Dissemination	Asynchronous	Non Anonymous	Text/ Graphic	One to Many	Once a Wk	Email/ Online Calendar/ Web
Disseminate information about course content	Dissemination	Asynchronous	Both	Text/ Graphic	One to Many/ One to One	Once a Wk	Web
Disseminate student's continuous progress reports and engage in conversation with parents about student academic progress	Dissemination/ Collaboration/ Dialogue	Both	Both	Text/ Audio	One to One	As Needed	IM/Email/ Web
Engage in ongoing conversations with parents about student behavior in class, and	Collaboration/ Share/Dialogue	Both	Non Anonymous	Text/ Audio	One to One	As needed	IM/Email
Make resources available about overall child well being	Dissemination	Both	Both	Text/ Graphic	One to Many One to One	As needed	Web

Although the use of new technologies is attractive in terms of immediacy and efficiency, it is important to recall that such use also poses a dilemma and continues to be an obstacle for a significant number of families that not have access to technology-based communication tools (Davenport & Eib, 2004). But the use of technology is not only limited to issues of accessibility and economic restrictions, preparation and readiness to use new technologies is an essential element to succeed in the communication process. In addition, not all tools meet the needs of the communication or are appropriate for the families, teachers, and or type of message shared (Cameron and Lee, 1997). The use of freeware and free software has the potential to overcome some of these limitations and to provide new venues for communication (see Table 3). Consequently, it is important to use a variety of methods for communicating to address teachers' and parents' needs and preferences (Moore, 2002) including traditional face-to-face communication, the use of paper copies, and telephone calls for those who do not have access to computers. The mix of traditional communication tools with new communication technologies including email, web resources, and social network software could meet the communication needs and supplement current forms of dialogue

between the school, teachers, parents, and students. Parents of children with serious problems in schools may want a more personal communication method when discussing a serious issue with the teacher. Other issues may require collaborative problem solving between the teacher and the family are more appropriately communicated by more personal means. Drawing from the National PTA's (1998) first recommendation regarding school/home communication, the "Use of a variety of communication tools on a regular basis, seeking to facilitate two-way interaction through each type of medium" will enhance and support students' academic success.

Table 3
Freeware Communication Tools

Technological Tool	Free Resources	URL Address
Online Grading	Engrade	http://www.engage.com
Email	Gmail/Yahoo/Hotmail	http://www.gmail.com
		http://www.yahoo.com
		http://www.hotmail.com
Online Calendar	Yahoo	http://www.yahoo.com
	Google	http://calendar.google.com
Web	Terapad	http://www.terapad.com
Instant Messaging Text, Chat and	Yahoo Messenger	http://www.yahoo.com
Videoconference	Skype	http://www.skype.com
	ooVoo	http://www.ooVoo.com

5. References

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