

Assessing Technology's Role in Communication between Parents and Middle Schools

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Abstract

Communication between schools and families is essential for building trusting relationships that foster parental involvement. Technology offers the middle school parent the means to actively participate in the child's education without being visible in the school thus fostering adolescent independence in a supportive environment. New technologies continue to be introduced yet, this study reveals that parents and teachers are not taking full advantage of technologies to bridge the communication gap and build family-school partnerships. Both quantitative and qualitative research methodologies were used to gather data from teachers and parents of middle school children. This study examines the role of communications technologies in fostering parental involvement in middle schools and uncovers barriers that prevent usage of technology to promote communication.

INTRODUCTION

Parental involvement as defined by Kohl, Lengua, and McMahon (2000) encompasses three areas: direct contact with teachers, parental actions at school, and parental actions at home. Communication between teachers and schools fosters parental involvement that has been shown to increase academic success (Epstein, 2005), as well as improve student behavior (Constantino, 2003; Fehrmann, Keith, & Reimers, 1987; Hoover-Dempsey, Walker, Sandler, Whetsel, Green, Wilkins, & Closson, 2005; Keith, Keith, Quirk, Spurduto, Santillo, & Killings, 1998). Technology has been shown to increase the means by which parents and teachers communicate (Bernstein, 1998; Davenport & Eib, 2004; Furger, 2006).

Innovative technologies such as cell phones, e-mail, and websites provide schools with new tools for reaching middle school parents and keeping them informed about their children. Traditional methods of communication such as face-to-face meetings have been found to be effective (Decker & Decker, 2003); however, these methods require time that both working parents and teachers may lack. Educators are often very good at mass communications via newsletters, calendars, letters, and handbooks, but mass communications are not effective in shaping or changing attitudes. In order to change

attitudes, educators must become effective at interpersonal communication with a target audience. Targeting specific audiences allows schools to shape attitudes and improve student educational opportunities (National Middle School Association, n.d.). Datta and de Kanter (1998) report usage of traditional modes of communication such as newsletters and telephone calls to be 75% and 73% as opposed to newer technologies such as websites and e-mail which are both less than 15%. Technology has been heralded as a tool that can provide new avenues for communication, but studies show that parents and teachers are not embracing them.

Epstein's Types of Parental Involvement

In 1988, Epstein developed a framework for creating parent-school partnerships and described five types of parental involvement that lead to successful partnerships: obligations of parents, obligations of schools, involvement at school, involvement at home, and involvement in decision making. In 1992, Epstein introduced a sixth type of involvement, collaboration with community organizations. Together these six types of parental involvement are thought to develop successful family-school-community partnerships.

Type 1, basic obligations of parents, includes the obligation of parents and families to provide safe, healthy home environments. The school can aid parents by providing workshops, presentations, and general information about health and safety issues. (Epstein, 1988, 1992). E-mail offers an easy, convenient way of informing parents when and where workshops will take place. Technology offers the means to inform parents of school-sponsored events that will facilitate Type 1 parental involvement.

Type 2, obligations of schools, asks the schools to communicate regularly with parents and keep them informed about school programs and their children's progress in school (Epstein, 1988, 1992). Schools can communicate with parents in a myriad of ways including traditional venues such as newsletters, notes, and telephone calls (Epstein, 1992). In today's technological society, these traditional forms of teacher communications can be supplemented electronically with e-mails and website information (Alexiou-Ray, Wilson, Wright, & Peirano, 2003; Bernstein, 1998; Davenport & Eib, 2004). Furger (2006) calls for schools to enhance parental involvement through increased communication by providing teachers with e-mail addresses, developing or enhancing school websites, delivering school newsletters electronically, allowing parents access to student data online, and distributing laptops to families in need.

Type 3, involvement at school, requires the schools to be proactive by inviting parents to participate in school activities and provide ample volunteer opportunities (Epstein, 1988, 1992). Giving parents the information they need about opportunities to volunteer is one way to increase family involvement (Feuerstein, 2000; Hoover-Dempsey, et al. 2005).

Schools can support type 4, involvement at home, by providing parents the information needed to assist their children with homework and other assignments (Epstein, 1988, 1992). Innovative technologies may assist schools by providing a means of disseminating information to parents. Electronic communication formats such as websites give families access to homework information and requires little time or effort to access (Decker & Decker, 2003).

Type 5, involvement in decision making, means giving parents the tools they need to become active members of governance councils. Type 6 involvement, collaboration with community organizations, intends for schools to help families make links with businesses and organizations that can be of assistance in the future of their children (Epstein, 1992). Frequent communication from schools is essential for achieving both type 5 and type 6 parental involvements. Dorman (1998) states that e-mail is advantageous since it can be quickly composed and can arrive at its destination in minutes. Chaboudy, Jameson, and Huber (2001) reported that the use of the school website has reduced barriers to parental involvement caused by time and geography. The website has allowed families to access school information 24 hours a day from any place in the world.

Epstein's six types of involvement establish the framework for constructing successful family-school-community partnerships that in turn foster academic achievement and behavioral success (Epstein, 1992). Sanders, Epstein, and Connors-Tadros (1999) and Swick (2003) make the case for school communication as essential for developing successful partnerships. Swick contends that empowering parent-teacher and family-school-community relationships are obtained through the use of communication behaviors that enrich the partners.

Parental Involvement in the Middle Grades

Researchers have heralded the importance of parental involvement in the middle grades (Epstein & Lee, 1995, Rutherford & Billig, 1995). Rutherford and Billig (1995) maintain the importance of middle school years in adolescent development and the importance of parental involvement in their child's middle school career. Due to the difference between middle school and elementary school structure, parents are forced to change the ways they communicate with schools. Research has shown that partnerships tend to decline across the grade levels unless schools and teachers work to develop appropriate grade level practices (Epstein, 1995; Maiké, 1996). As children move from the elementary school grades into middle school, communication patterns between schools, families, and students change. The students' schedule becomes more fragmented with many more teachers and subjects; there are added extra-curricular opportunities, and there is an increasingly complex curriculum (Rutherford & Billig, 1995). Parents of elementary school children often have one primary teacher. As their children move into middle and high school, parents' trust begins to decline due to a lack of a personal relationship with one teacher (Adams & Christenson, 2000). However, one-on-one communication between parents and teachers helps build a supportive environment for the middle school grades (Rutherford & Billig, 1995).

Many forms of communication exist including oral, either face-to-face or via the telephone; print, either newsletters or notes; and electronic, either e-mail or websites (Berger, 2000; Decker & Decker, 2003; Gestwicki, 2000). According to Decker and Decker (2003), oral, face-to-face communication is the most effective. Face-to-face communication allows for the participants to perceive visual cues in addition to the oral message and reduces the chances for misinterpretation of tones. In addition, schools can also make use of the telephone for two-way communication between teachers and parents as well as general communications from the school regarding school events. Gestwicki (2000) says that telephone communication facilitates two-way communication and

parents may feel more at ease asking questions over the telephone wires as opposed to face-to-face. According to Constantino (2003), the telephone has the advantages of familiarity, easy use, and widespread availability. The disadvantage is the lack of availability of telephones in teachers' classrooms, thus making telephone communication inconvenient for the teacher. The increased availability of cellular phones now adds a new dimension to telephone communication. The number of cell phone subscribers has risen from 340,213 (1985) to 207,896,198 (2005) and thus offers a new, readily available mode of telephone communication for both parents and teachers (Information Please, 2006).

METHODOLOGY

The purpose of this study was to evaluate the role of two interpersonal communications technologies, cell phone and e-mail, and one mass communication technology; school websites, in the communication practices between middle school students' parents/guardians and teachers. This study ascertained the role of innovative technologies for communication and identified barriers that impede the use of communication technologies in parent-school communication. Specific research questions were:

1. When used to communicate with middle school parents, do innovative technologies such as cell phones, e-mail, and websites facilitate parental involvement?
2. Which modes of communication facilitate Epstein's six types of parental involvement?
3. What barriers inhibit the use of technologies in communication between schools and parents?

Sample

The southeastern state where the study takes place enrolls 730,140 students with 51.6% of the state's students eligible for free/reduced lunches (National Center for Education Statistics, 2006). Three suburban middle schools, located in the western portion of the state, were purposefully chosen for this study so that a sample of socioeconomic status could be obtained. One school had a low SES as measured by 84.8% of the students eligible for free/reduced lunches; one had a mid-level SES (50.9% free/reduced lunches); and one had a high SES (33.4% free/reduced lunches). The low SES school had 45 teachers and an enrollment of approximately 503 students. The mid-level SES school had 32 teachers and an enrollment of approximately 595 students. The high SES school had 27 teachers and an enrollment of approximately 478 (J. S. Driver, personal communication, November 9, 2006).

Instrumentation

To obtain data for this study, two methods of collection were employed. Teachers and parents from three southeastern middle schools were surveyed using a researcher developed instrument. Afterwards, both teachers and parents from the three middle schools were informally interviewed to allow for a more in-depth discussion of communication practices.

The survey instrument was first used to gather descriptive data regarding parent involvement and communication methods as well as demographic information such as

level of education attainment, income, and ethnicity, a survey instrument for parents was developed (see Appendix A). The instrument was constructed using a review of current literature to help identify methods of communication between schools and parents (Berger, 2000; Bernstein, 1998; Davenport & Eib, 2004; Decker & Decker, 2003; Furger, 2006; & Gestwicki, 2000). Additionally, a survey from a previous study conducted by the researcher was used as a template for creating the new instrument. Likewise, a survey instrument was developed for gathering teacher data with items that paralleled the parent survey instrument (see Appendix B). Reliability was not conducted on the instrument due to the nonsummative nature of the items. Construct validity was acquired through evaluation of the instrument by a panel of three additional professionals in the fields of educational research and instructional technology.

Survey items regarding parental involvement were developed around Epstein's (1992) six types of parental involvement in order to obtain information on how technology was being used to facilitate parental involvement. Epstein proposed that successful partnerships involved six areas of interactions: obligations of parents, obligations of schools, involvement at school, involvement at home, involvement in decision making, and collaboration with community organizations. Survey items required both teachers and parents to respond to questions about how various modes of communication facilitated these types of interactions.

Items regarding communication methods were ones previously used in a study administered to parents and teachers in a k-12 private school and had been identified from the literature (Berger, 2000; Bernstein, 1998; Davenport & Eib, 2004; Decker & Decker, 2003; Furger, 2006; & Gestwicki, 2000). Many forms of communication exist, including oral; face-to-face or via the telephone; print, either newsletters or notes; and electronic, either e-mail or websites (Berger, 2000; Decker & Decker, 2003; Gestwicki, 2000). Calculating percentages of participants' responses, the data from the researcher's previous study revealed that parents preferred face-to-face communication, whereas teachers were more accepting of e-mail. The previous study also revealed that both teachers and parents preferred the printed newsletter as a means of gaining information about school events compared to the electronic website. Furger (2006) called for schools to enhance parental involvement through communication by providing teachers with e-mail addresses, developing or enhancing school websites, delivering school newsletters electronically, and allowing parents access to student data online. Thus, the researcher's previous survey items regarding preferred modes of communication were modified in an effort to obtain more specific data regarding how e-mail, websites, and cell phone technologies were being used to facilitate Epstein's six types of parental involvement and what barriers prevented their use.

The demographic items for the survey instrument were identified from the literature and included level of educational attainment, income, and ethnicity. Day, Janus, & Davis (2005) reported that computer ownership and Internet access differed by income, educational attainment, and ethnicity. Smerdon, Cronen, Lanahan, Anderson, Iannotti, and Angeles (2000) also revealed usage of electronic technologies in schools differed based on SES, minority enrollment, and level of income.

The second aspect of this study was qualitative in nature. Both the parent and the teacher survey instruments (Appendices A and B) contained sections with open-ended questions. These open-ended questions allowed parents and teachers to respond freely to

a set of questions regarding their perceptions about communication and parental involvement using technology. Additionally, separate focus groups meetings were planned with parents and teachers completing the surveys and agreeing to participate in a focus group. However, due to the number of parents and teachers who participated, the focus groups were conducted as informal interviews. Three parent/guardian interviews as well as three teacher interviews per school were conducted to obtain insights into parental involvement and communication. Some of the questions asked in the interviews were:

1. Do you think communication from the school encourages parental involvement? (How? Why not?)
2. Which method of communicating with teachers do you prefer: face-to-face, notes, telephone, e-mail, Websites?
3. What can the school do to make communication between parents and teachers more effective?
4. What are the biggest barriers that prevent or hinder you from using technology to communicate?
5. What can the school do to encourage you to use technology to communicate?

Data Collection

The data collection process began when parent surveys were distributed to the students during their last class of the day when the students' school progress report was also being distributed. This was done in an effort to ensure that parents were looking for communication from the school on that day. A letter explaining participation incentives, including monetary prize drawings and an MP 3 player, grand prize was attached to the survey instrument. After one week of collecting surveys, a reminder was sent home to the parents and teachers in an effort to encourage participation. Shortly afterward, the teacher survey instruments were distributed. Despite the various attempts to collect additional responses, the survey return rates were very low. A total of 1584 parent surveys were distributed and 162 were returned completed resulting in a response rate of 10%. The teachers' response rate was 46%. A total of 104 teacher surveys were distributed and 48 were returned completed. The total number of surveys returned was 210. After the initial return of the surveys, any survey that did not have a signed consent but that contained contact information for the parent received a call requesting an address and subsequently received a self-addressed stamped envelope along with the consent form for them to sign and return. Thirty additional surveys were returned but could not be used due to the lack of a signed consent form.

Although the return rate was low, the sample was representative of the population. Mittag and Thompson (2000) state, "The critical question when such response rates are realized is whether the respondents are still representative of the population to which the researcher wishes to generalize" (pp. 14-15). Mittag and Thompson (2000) further suggested that the response profiles should be analyzed in order to resolve this issue. The state's public school ethnic demographics indicated that 59.7% of the population was

Caucasian, 36.1% was African American, 2.4% was Hispanic, and 1.8% other. The sample generated in this study was consistent with the state demographics: 60.5% Caucasian, 37.7% African American, 1.2% Hispanic, and 0.6% other. Furthermore, state statistics indicated that 51.6% of public school students were eligible for free or reduced priced lunches. The overall percentage of students eligible for free or reduced priced lunches in this sample was 43.2%. Upon an examination of the individual schools, the low SES school reported 84.1%, the middle SES school reported 50.9%, and the high SES school reported 33.4%. The sample indicated low SES, 85.7%; middle SES 56.9%; and high SES, 24.7%. The sample appears to be representative of both the state ethnic demographics as well as the state and local socioeconomic demographics, thus suggesting that the sample provided an adequate representation of the population.

The survey instrument contained a place for contact information for the parents/guardians who were willing to participate in the focus groups. Those names were pooled and drawn randomly to select 6 people for the focus groups. The recommended number of participants for focus groups varies from five to about 12. For the specific purpose of in depth discussions, Jayanthi and Nelson (2002) suggest 6-8 participants. Larger groups with 10-12 participants may cause delays, with less interaction and response time (Levy, 1979). Finally, a pool of 6 parent participants from each school agreed to attend the focus group meetings; however, once the meeting dates arrived one parent appeared from the low SES school, one parent from the middle SES school, and only two parents from the high SES school were present. The focus groups changed into informal interviews because the number of participants fell below the recommended 6-8 individuals (Jayanthi & Nelson, 2002). Furthermore, similar efforts were made in an effort to create teacher focus groups. Due to a lack of response from the teachers, a personal plea was made at each school's faculty meeting for more volunteers for the focus group. The middle and high SES school resulted in one teacher volunteering for the focus group from each school, whereas the low SES school had four teachers volunteer. Subsequently, three teacher meetings were conducted as informal interviews.

RESULTS

Of the 210 participants in the study, 162 were parents, and 48 were teachers. The parent group consisted of 81 parents from the high SES school (50.0%), 59 from the middle SES school (36.4%), and 22 from the low SES school (13.6%). The teacher group contained 15 teachers from the high SES school (31.3%), 22 from the middle SES school (45.8%), and 11 from the low SES school (22.9%).

Other data gathered from the demographic section of the parent survey are presented in Table 1. Seventy-two percent of the parents responded that they owned a computer, yet only 35.8% of them reported using e-mail to communicate with a teacher. In 2003, 61.87% of American households reported having computers, and 54.7% had Internet access (Day et al., 2005). Yet, in this study parents reported computer ownership at a higher frequency (83.3%). The increase in computer ownership may be attributed to the lower cost of computers today compared to 5 years ago. Fifty percent did however, report using the computer to check the school website for important dates, and 55.6% checked for homework information. With 93.8% of the parents indicating cell phone ownership, only 42.6% reported using a cell phone to contact a teacher.

A closer examination of cross tabulations of schools by responses to each of these items revealed a trend in usage by school (see Table 1). Ownership of the technology was reported at almost equal percentages, but usage of computer technology was reported to be higher by both the middle and high SES schools, with the most usage reported by the high SES school. In contrast to computer technology usage, a higher percentage of low SES parents reported using cell phones to communicate with teachers.

Table 1. Frequencies and Percentages Related to Technology Ownership and Use by Parents

Question	Frequency "Yes"	Percent "Yes"
Do you own an Internet connected computer?		
Overall	117	72.2
High SES	71	87.7
Middle SES	36	61.0
Low SES	10	83.3
Do you use e-mail to communicate with your child's teacher?		
Overall	58	35.8
High SES	36	44.4
Middle SES	21	35.6
Low SES	1	9.1
Do you ever check the school website for homework information?		
Overall	90	55.6
High SES	52	64.2
Middle SES	28	47.5
Low SES	1	4.5
Do you ever check the school website for important school dates?		
Overall	81	50.0
High SES	54	66.7
Middle SES	34	57.6
Low SES	2	9.1
Do you own a cell phone?		
Overall	152	93.8
High SES	78	96.3
Middle SES	56	94.9
Low SES	18	81.8
Do you ever call your child's teacher using your cell phone?		
Overall	69	42.6
High SES	32	39.5
Middle SES	26	44.1
Low SES	11	50.0

Table 2. Frequencies and Percentages Related to Technology Ownership and Use by Teachers

Question	Frequency “Yes”	Percent “Yes”
Do you have an Internet connected computer in your classroom?		
Overall	48	100.0
High SES	15	100.0
Middle SES	22	100.0
Low SES	11	100.0
Do you use e-mail to communicate with parents?		
Overall	46	95.8
High SES	15	100.0
Middle SES	22	100.0
Low SES	9	81.8
Do you post your homework on the school website?		
Overall	36	75.0
High SES	13	86.7
Middle SES	18	81.8
Low SES	5	45.5
Do you post class syllabi on the school website?		
Overall	25	52.1
High SES	4	26.7
Middle SES	14	63.6
Low SES	7	63.6
Do you own a cell phone?		
Overall	46	95.8
High SES	15	100.0
Middle SES	22	100.0
Low SES	9	81.8
Do you ever call parents on your cell phone to discuss student progress?		
Overall	32	66.7
High SES	6	40.0
Middle SES	18	81.8
Low SES	8	72.7

Table 2 presents the frequency and percentage of technology ownership and usage by teachers. One hundred percent of the teachers reported having an Internet connected computer available in the classroom. The percentage of teachers reporting using e-mail

was high (95.8%), yet the school website is not being used to communicate with parents at a comparable percentage. The same is true for cell phones, where 95.8% of the teachers indicated cell phone ownership, but only 66.7% have used them to contact parents. Table 2 also illustrates a breakdown of technology ownership and usage by school. A high percentage of teachers from all three schools reported using e-mail to communicate with parents. Teachers from the low SES school indicated less use of the website for posting homework (45.5%) compared to the high SES school (86.7%) and the middle SES school (81.8%). In contrast, the low SES school reported more use of cell phones to communicate with parents (72.7%) compared to the high SES school (40.0%). However, both the low SES and middle SES teachers reported posting syllabi on the school website (63.6%) at a higher percentage than the high SES teachers (26.7%).

Part II of the survey addressed the issue of which modes of communication were being used to facilitate Epstein's six types of parental involvement. Data from this section revealed traditional venues of mass communication such as newsletters overwhelmingly dominate as the mass communication method through which parents receive information (see Table 3). Parents reported that they received information about health and safety workshops/issues, volunteer opportunities, homework assignments, P.T.O. news, sporting events, and community services predominately through newsletters. The school website was used primarily to announce P.T.O activities (22.2%), sporting events (19.1%) and homework assignments (18.5%). Parent-teacher organizations made use of e-mail technology to announce meeting dates and activities to a lesser extent, whereas cell phone technology was being used little for mass communication of information. However, an examination of the frequencies of use for more personal communication such as academic problems (16.7%) and academic successes (14.8%) revealed that cell phones were being used by parents at a noteworthy level.

Table 3. Comparison of Percentages of Overall Parent and Teacher Responses to Usage of Technology Versus Newsletters for Mass Communication Items

Item	Cell	E-mail	Website	Newsletter
Health and safety workshops				
Parents	6.2	8.0	7.4	70.4
Teachers	2.1	8.3	39.6	75.0
Health and safety issues				
Parents	4.3	6.2	6.8	75.3
Teachers	2.1	12.5	35.4	83.3
Volunteer opportunities				
Parents	4.3	9.3	10.5	68.5
Teachers	8.3	27.1	50.0	77.1
Homework assignments				
Parents	6.2	4.9	18.5	20.4
Teachers	12.5	18.8	64.6	16.7
P.T.O meetings				
Parents	4.3	11.1	15.4	71.6
Teachers	2.1	14.6	56.3	72.9

Table 3 (continued)

Item	Cell	E-mail	Website	Newsletter
P.T.O activities				
Parents	3.1	12.3	19.1	69.1
Teachers	0.0	16.7	58.3	79.2
Sporting events				
Parents	2.5	8.6	22.2	67.3
Teachers	2.1	8.3	45.8	70.8
Community Services				
Parents	3.7	4.9	8.6	56.8
Teachers	2.1	8.3	45.8	79.2

The data from the teacher survey exposed a difference in views between parents and teachers in connection with the mode of communication used by the school in some areas. Teachers reported using the school website to a greater extent than the parents reported in reference to health and safety issues, opportunities to volunteer, P.T.O. meetings/activities, sporting events, and community groups that offer free services as reported in Table 3. Interviews with teachers from all three schools supported these data, yet most parents reported receiving this information primarily from printed newsletters. Yet, teachers' responses supported the parents' indication that technologies such as cell phones and e-mail were being used to communicate with parents in regard to more personal issues such as academic problems (39.6%), academic successes (29.2%), and behavioral problems (54.2%) of students.

DISCUSSION

Data from the survey were used to answer the first research question, "When used to communicate with middle school parents, do innovative technologies such as cell phones, e-mail, and websites facilitate parental involvement?". Several trends in communication between parents and teachers were revealed through evaluation of the responses to the items in the demographic sections of the surveys as well as the responses to the survey items. Frequencies and percentages of responses to the questions listed in the demographic section of each survey revealed similarities in ownership of cell phone and computer technology but differences in the usage of these technologies by parents and teachers. As seen in Table 1, 72.2% of the parents reported computer ownership, yet only 35.8% claimed to correspond with teachers via e-mail with those from the high SES reporting the highest percentage of use (44.4%). In comparison to the parents reported ownership of computers, 100.0% of the teachers expressed access to an Internet-connected computer in the classroom (see Table 2). Upon examining the usage of the computer for e-mail communication with parents, a high percentage of responding teachers indicated that they did use e-mail (95.85%). Teachers are making use of the available technology to communicate with parents, yet according to the results of this study parents are not. Parents and teachers must develop a line of connection between

home and school (Epstein, 1988, 1992). Technology has been heralded as a tool that can provide new avenues for communication (Berenstein, 1998; Davenport & Eib, 2004; & Furger, 2006), but studies show that parents and teachers are not embracing technology (Datta & de Kanter, 1998). For family-school partnerships to fully benefit from technology, both parents and teachers must be willing to embrace technology as a communication tool.

This study reveals that the school website can be effective at facilitating parental involvement by keeping parents informed of homework and important school dates. More parents indicated using the computer to check the school website for homework information (50.0%) and important school dates (55.6%) than they did for e-mail (35.8%). Perhaps parents find using the school website easier, because checking the website does not require the parent to know teachers' e-mail addresses. School websites are an excellent vehicle for disseminating school information. Swaim (2006) identified scarcity of time and language barriers, as well as apathy and inadequate budgets as barriers to ongoing communication with parents. Swaim argued that traditional venues of communication such as telephone calls, notes home, and face-to-face conferences are important avenues for communication; however, electronic communication such as e-mail, e-newsletters, Web pages extend the possibilities for communicating with parents. Seventy-five percent of the teachers in this study responded that they do post homework on the school website and 52.1% reported posting a class syllabus on the website. Posting homework assignments and class syllabi are two ways to keep parents informed about classroom activities. One parent from the high SES school voiced concern that middle school students whose parents were visible at school faced ridicule from other students. Having information available online informs parents when they may otherwise hesitate to visit the school:

I think middle school is the toughest time and we lose a lot of communication when our kids are going through changes in their bodies and peer pressure is at a higher level. Kids at that age don't want parents at school. Other kids would say, "You're a momma's boy or a daddy's boy".

Technology affords parents the opportunity to discover what their children are doing in school without having to be visible, thus fostering independence in their adolescent students. Rutherford and Billig (1995) argued that there is a significant need for parental involvement during the middle school years as students struggle with adolescent development and educational decisions that have serious consequences for their futures. Parents can use the school website to stay informed and in turn develop family-school partnerships that assist the development of independence in the middle school student.

Cell phones are another growing technology in American society and this study examined their role in facilitating parental involvement in middle schools. Of the parents responding in this study, 93.8% reported that they owned a cell phone and still only 42.6% indicated using it to call their child's teacher. The availability of cell phones could easily increase parent-teacher communication, yet both parents and teachers reported low percentages of cell phone use for home-school communication. One reason for the lack of cell phone use in communicating with teachers could be the cost involved. Parents may not want to use their cell phone minutes for a parent-teacher phone conference if a

landline phone is available. Teachers reported cell phone ownership at 95.8%, but only 66.7% indicated using them to call parents. During the teacher interviews many expressed similar concerns regarding the use of their personal cell phone minutes for contacting parents as well as school board policies that prohibit the use of cell phones at school. The availability of landline phones may preclude the need for use of cell phones for general communication. Most parents and schools have landline phones and thus the need for cell phone use is limited to situations where there is an immediate need for communication. Cell phones are a technology that although available and convenient, may only be needed for immediate classroom concerns where landline phones are not readily available.

The question, "Which modes of communication facilitate Epstein's six types of parental involvement?" proved to be complex and depended on the nature of the communication; mass or interpersonal. Using the data from part II of the surveys, a pattern of dependence on traditional forms of communication was uncovered. Table 3 illustrates the percentages of parents using newsletters as their primary means of information compared to other innovative technologies such as e-mail, websites, and cell phones. Parents reported newsletters as their primary source of information regarding health and safety workshops/issues, volunteer opportunities, homework assignments, P. T. O. meetings/activities, sporting events, and community services. These mass communication issues were all facilitated through the use of the traditional newsletter. The National Middle School Association (n.d.) recognized that educators are often very good at mass communications via newsletters, calendars, letters, and handbooks, but argued that mass communications are not effective in shaping or changing attitudes. Expansion of the use of interpersonal communication technologies is needed to target specific audiences. According to the National Middle School Association, targeting specific audiences allows schools to shape attitudes and improve student-learning opportunities (National Middle School Association, n.d.). Yet, teachers indicated the use of interpersonal technologies such as cell phones and e-mail to inform parents of personal issues such as behavior and academics relating to their children not for mass communication. E-mail is an excellent interpersonal communication tool that can reach many parents and keep them informed of school news (Berenstein, 1998; Dorman, 1998).

Teachers also recognized the need to use multiple communication devices to maximize contact with parents. Interpersonal communication devices such as the cell phone and even the computer for personal e-mail communication offers schools technological tools for one-to-one communication with parents that do not require large amounts of time out of already busy schedules as does the traditional parent conference. Bernstein (1998) reported that administrators at Salem High School in Massachusetts who use e-mail to communicate with parents found it an easy, cost-efficient, quick method of communication. Electronic communication requires little time and gives parents access to homework information as well as a direct line to the teacher (Decker & Decker, 2003). Dorman (1998) stated that e-mail offers several advantages, including easy composition and arrival at its destination in minutes. However, both parents and teachers must possess the means, the skills, and the desire to effectively communicate via technology. This study reveals that computer technology is becoming more available to both groups, but parents are lagging behind in the use of technology for communicating with teachers.

The answers given to the free response question, “Why don’t you use technologies to communicate with the school?” were evaluated in an effort to answer the research question, “What barriers inhibit the use of technologies in communication between schools and parents?”. Answers from parents included lack of Internet connection, an e-mail account, and the skills to use the technologies. Additionally, many parents expressed a need to have teachers’ e-mail addresses and even concern that teachers did not have e-mail access. Administrators should make teacher e-mail addresses available to parents, and they should encourage teachers to respond to parent e-mails. Several parents expressed frustration with trying to communicate with teachers through e-mail because teachers failed to respond to their efforts. Administrative policies that encourage teachers to communicate electronically with parents may directly influence the use of technology for communication between parents and teachers. Most teachers indicated that their choice of communication instrument depended greatly on the resources of the parent. Teachers in the low SES school expressed concerns that the families served by their schools often lacked Internet technology in the home. Parents in all three schools expressed a desire for more personal face-to-face interaction or telephone conversations.

IMPLICATIONS

Congress has mandated family-school partnerships in order for schools to obtain Title 1 funding (No Child Left Behind Act, Section 118, 2001). Family-school partnerships are not easily formed, but they can be facilitated through continual communication. Innovative technologies such as e-mail, websites, and cell phones have the potential to expand communication and thus bridge the communication gap between parents and middle schools. Communications technologies can thereby enable parents to stay involved in their adolescent children’s educations and still encourage the development of independence during the middle school years.

Findings from this study support the importance of comprehensive communication efforts to reach as many parents as possible. Epstein’s six types of parental involvement were facilitated through a use of multiple modes of communication that include both the time honored and the novel. The results indicate that many parents still rely on traditional forms of communication such as landline phones, printed newsletters, and face-to-face communication, which discloses that educators and parents alike are not taking full advantage of the convenience and quickness of communicating through electronic means like e-mail and websites.

Technology provides promising avenues for disseminating information to parents (Constantino, 2003; Davenport & Eib, 2004; Decker & Decker, 2003). Schools invest time in training teachers and money for technology, yet this study indicates that schools may not be seeing a promising return for their investment. This research suggests that legislators must work to put technology in the hands of parents of school-aged children, educators must teach the appropriate technology skills such as e-mail and Internet use, and administrators must encourage the use of technology for communication between parents and teachers. If these actions are taken, then better communication between parents and teachers is likely to occur, and parental involvement is likely to increase.

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Appendix A

PARENT COMMUNICATION SURVEY

The following survey regarding communication between schools and parents/guardians is an important part of a research study on communication.

- If you are both a parent and teacher in this middle school, please complete two surveys, one parent survey and one teacher survey. Respond to the items based on your personal experience.
- **If you are a parent and have more than one child in this middle school, please complete two surveys, one for each child. Respond to the items based on your personal experience with the school.**

Please answer all items. Your answers will be kept confidential. No one will connect your name to your responses.

Part I. Demographic Information CIRCLE your response to the following items.

1. What is your gender? Male Female
2. What is your age? Under 30 30-39 40-49 50-59
60 or above
3. What is your highest level of education? Some high school (or less)
High School Diploma Some College Bachelor's Degree
Some Graduate School Graduate Degree
4. What is your ethnicity? Caucasian African American Hispanic
Asian American Other (please specify) _____
5. Does your child receive a free or reduced priced lunch? Yes No
6. Do you own an Internet connected computer? Yes No
7. Do you use e-mail to communicate with your child's teacher? Yes No
8. Do you ever check the school website for homework information? Yes No
9. Do you ever check the school website for important school dates? Yes No
10. Do you own a cell phone? Yes No
11. Do you ever call your child's teacher using your cell phone? Yes No

Survey continued on the next page →

Part II. Communication and Parental Involvement

For each item, CHECK the type of communication device that the school uses most often. NA means the question does not apply to you or your child. If the forms of communication listed are not used by the school the most often, please fill in the form of communication used under the category "other".

	<u>Cell phone</u>	<u>E-mail</u>	<u>In Person</u>	<u>Newsletters</u>	<u>Websites</u>	<u>NA</u>	<u>Other</u>
12. How does the school inform you of workshops about health and safety issues? <u>Health and safety issues</u> refer to issues such as fire safety, youth protection, hygiene, etc.	___	___	___	___	___	___	___
13. How does the school provide information to you about health and safety issues?	___	___	___	___	___	___	___
14. How does your child's teachers inform you about your child's behavioral problems?	___	___	___	___	___	___	___
15. How does your child's teachers inform you about your child's academic problems?	___	___	___	___	___	___	___
16. How does your child's teachers inform you about your child's academic successes?	___	___	___	___	___	___	___
17. How does the school inform you about opportunities to volunteer?	___	___	___	___	___	___	___
18. How does your child's teachers inform you about your child's homework assignments?	___	___	___	___	___	___	___
19. How does your child's teacher inform you about your child's missing assignments?	___	___	___	___	___	___	___
20. How does the school notify you about Parent Teacher Organization (P.T.O.) meetings?	___	___	___	___	___	___	___
21. How does the school inform you about Parent Teacher Organization (P.T.O) sponsored activities?	___	___	___	___	___	___	___
22. How does the school inform you of sporting events?	___	___	___	___	___	___	___
23. How does the school inform you about community groups that offer free services such as tutoring and health screenings?	___	___	___	___	___	___	___

Survey continued on the next page →

Part III. Free Response. Write your answers to the following questions in your own words.

24. Why don't you use technologies such as e-mail and websites to communicate with the school?

25. How can the school improve communication with parents?

26. What method of communication would you prefer the school to use?

End of Survey

Thank you for your time!

If you would be willing to participate in a discussion group regarding the above issues, please provide your contact information. I will contact you at a later date *if your name is randomly selected* for the focus group.

If you do not wish to meet for a discussion of these issues please leave this section blank!

Name: _____

Phone number _____ Best time to call

E-mail _____

Appendix B

TEACHER COMMUNICATION SURVEY

The following survey regarding communication between schools and parents/guardians is an important part of a research study on communication.

- If you are both a parent and teacher in this middle school, please complete two surveys, **one parent survey and one teacher survey**. Respond to the items based on your personal experience.
- **If you are a parent and have more than one child in this middle school, please complete two surveys, one for each child. Respond to the items based on your personal experience with the school.**

Please answer all items. Your answers will be kept confidential. No one will connect your name to your responses.

Part I. Demographic Information CIRCLE your response to the following items.

- | | | | |
|--|--|------------------|--|
| 1. What is your gender? | Male | Female | |
| 2. What is your age? | Under 30 | 30-39 | 40-49 50-59 51-59 60 or above |
| 3. What is your highest level of education? | Bachelor's Degree Some Graduate School
Graduate Degree | | |
| 4. What is your ethnicity? | Caucasian | African American | Hispanic Asian American
Other (please specify) _____ |
| 5. Do you have an Internet connected computer in your classroom? | | | Yes No |
| 6. Do you use e-mail to communicate with parents? | | | Yes No |
| 7. Do you post your homework on the school website? | | | Yes No |
| 8. Do you post class syllabi on the school website? | | | Yes No |
| 9. Do you own a cell phone? | | | Yes No |
| 10. Do you ever call parents on your cell phone to discuss student progress? | | | Yes No |

Survey continued on the next page →

Part II. Communication and Parental Involvement

For each item, CHECK the type of communication device that the school uses **most often**. NA means the question does not apply to you. If the forms of communication listed are not used by the school the most often, please fill in the form of communication used under the category "other".

	<u>Cell phone</u>	<u>E-mail</u>	<u>In Person</u>	<u>Newsletters</u>	<u>Websites</u>	<u>NA</u>	<u>Other</u>
11. How does the school inform parents of workshops about health and safety issues? <u>Health and safety issues</u> refer to issues such as fire safety, youth protection, hygiene, etc.	___	___	___	___	___	___	___
12. How does the school provide information to parents about health and safety issues?	___	___	___	___	___	___	___
13. How do you inform parents about their child's behavioral problems?	___	___	___	___	___	___	___
14. How do you inform parents about their child's academic problems?	___	___	___	___	___	___	___
15. How do you inform parents about their child's academic successes?	___	___	___	___	___	___	___
16. How does the school inform parents about opportunities to volunteer?	___	___	___	___	___	___	___
17. How do you inform parents about their child's homework assignments?	___	___	___	___	___	___	___
18. How do you inform parents about their child's missing assignments?	___	___	___	___	___	___	___
19. How does the school notify parents about Parent Teacher Organization (P.T.O) meetings?	___	___	___	___	___	___	___
20. How does the school inform parents about Parent Teacher Organization (P.T.O.) sponsored activities?	___	___	___	___	___	___	___
21. How does the school inform parents of sporting events?	___	___	___	___	___	___	___
22. How does the school inform parents about community groups that offer free services such as tutoring and health screenings?	___	___	___	___	___	___	___

Survey continued on the next page →

Part III. Free Response. Write your answers to the following questions in your own words.

23. Why don't you use technologies such as e-mail and websites to communicate with parents?

24. How can the school improve communication with parents?

25. What method of communication would you prefer parents to use when contacting you about their children?

End of Survey

Thank you for your time!

If you would be willing to participate in a discussion group regarding the above issues, please provide your contact information. I will contact you at a later date *if your name is randomly selected* for the focus group.

If you do not wish to meet for a discussion of these issues please leave this section blank!

Name: _____

Phone number _____ Best time to call

E-mail _____