

THE ROLE OF TECHNOLOGY IN FAMILY PARTNERSHIPS

Technology provides only an opportunity; an active interest on the school's part in increasing parental involvement is necessary if the opportunity is to be used.

—James Coleman

Technology can significantly bolster the partnerships between home and school provided school leadership understands the value in strong family partnerships. Students can also attain the autonomy in their education and accountability for learning, which is essential to long-term success. With the advent of technological applications in education, school leaders have new resources at their disposal. Blanchard (1997) explains how technology can serve the family-school connection: (1) communication and information, (2) learning and instruction, (3) interest and motivation, and (4) resources and costs. He expands on these four areas by highlighting specific technological applications: establishing two-way communication between homes and schools; discussing school experiences within and among families and communities; involving families who are presently difficult to reach; helping teachers and families acquire needed knowledge and skills; building the capacity of the schools to improve the educational health of the family; helping parents extend learning to the home in more meaningful ways by allowing them to be instructors or coaches as well as learning partners; helping families and schools motivate children; providing support and coordination for homes and schools to sustain involvement; and reducing resource costs of educating children.

VOICE-MAIL APPLICATIONS

The first school-wide application of voice-messaging technology was in 1987. Experiments resulted in the Transparent School Model, which could be used in any school (Bauch 1997). The model provides voice-based information between teachers and parents and has at its core two primary functions: First, parents can call and listen to the teacher's daily message; and second, the system can send automated calls to parents with information that the families need. In most schools the results are astonishing. At least half of the parents call every day to hear teacher messages. Parent involvement rates go up by 500–800 percent. Student learning performance goes up and success rates improve (Bauch 1997). New technology can now link the voice-messaging system with the school's web page, allowing Internet access to the same school and class information as well as attendance and achievement data for individual students. Voice mail, e-mail, interactive websites, and other two-way communication systems are now established ways to open schools to virtually all homes. But it is the telephone that continues to have all the advantages of familiarity, easy use, and widespread availability. In order for schools to be

successful with using technology to promote true parent involvement, rather than defaulting to a more traditional, one-way “homework hotline” communications approach, teacher training and the personal involvement of the individual school’s leader are critical to long-term success.

A logical step in the lineage of voice-messaging applications was the creation of the Bridge Project. Funded by the American Business Collaboration and in partnership with Vanderbilt University, schools across the country had the opportunity to apply for grant funding to install voice-messaging technology as a way to garner more parent involvement with school. In 1995, 104 schools successfully completed grants and were funded for the Bridge Project. Before starting the Bridge program, the mean number of parent contacts per teacher per day for Bridge Project schools was 2.66. Only two to three parents had any type of interaction with their child’s teacher on any given day; most parents had none. After one month of using the voice messaging technology, in tandem with concepts learned from Transparent School Model training, parent contacts per teacher per day increased to 11.46. This initial gain was about 430 percent. As more schools reported data, the figure rose to 487 percent. When adding messaging and actual contacts together, the overall increase in parent involvement is almost 500 percent.

The range of increase of Bridge Project schools was from 236 percent to 950 percent. There is also correlation between the effort a school placed on publicity to promote its new technology and the frequency of system use. Principals adapting the “five types” method of publicity (that is, promoting the system five different ways) were more successful in attaining high usage rates. The “five-type” system includes the three major categories of written, aural, and verbal communication. Under these headings there exist ideas such as newsletters, magnetized memo pads, pencils, signs, buttons, banners, feature stories, student projects depicting the event or practice, and so forth. The point made is a simple one: the more diversity in communicating your ideas, the more likely families and communities will comprehend the message and participate in the program being promoted. Stonewall Jackson High School acted as a pilot school for the Bridge Project.

Baseline data collected at the school before the Bridge Project implementation showed that the average rate of parent involvement was 1.3 contacts of all types per teacher per day. In the first month of project operation, there were 11,518 calls to the school. This represented 9.0 calls per teacher per day. Based on this data, there was a 592 percent increase in parent/teacher contacts, with approximately 50 percent of the school’s families contacting the school daily.

The initial use of technology to promote family partnerships that incorporated telephone-based programs was later expanded to use Internet-based applications in tandem with the original concept of voice-mail messaging.

Parents can access the system with a personalized password to retrieve information about their child's cumulative grades, completed and missing assignments, and class attendance. Parents can listen to voice-mail messages about classroom work through their computers while perusing this grade and attendance information. Parents have the opportunity to e-mail specific teachers or send general e-mails to the school.

HOW TECHNOLOGY REMOVES BARRIERS

There is a recurring problem that can be addressed succinctly within the context of the applications of technology to promote the engagement of all families. Even though there are years of research supporting the notion that family involvement and engagement improves the academic achievement of children, family engagement continues to be relinquished to subsidiary priority lists of educators. Engaging families is seen as important, but barriers to that engagement make it difficult—and in many cases, impossible—to develop and implement strong family engagement programs. Technology, however, does provide a systemic solution to many of the barriers that plague the efforts of educators to promote strong family engagement in their schools. To understand how technology can help, it is important to understand what the barriers are.

Research suggests that **the largest barrier to family engagement is time**. Families of all kinds are finding it more and more difficult to manage families and careers. Many families indicate they have little time for their children and even less time to involve themselves in their children's school life. This is especially true in single-parent families or other families in which there is one parent, guardian, or family member responsible for children. The majority of two parent households find both mother and father working outside of the home, leaving available time at a premium.

Schools find dwindling attendance to meetings, conferences, and other school events and quickly assume that apathy exists among the families. There is nothing further from the truth. Time and long lists of responsibilities force families to make difficult choices; attending school events and being involved with their child's school life often drop on the list of priorities. It stands to reason that anything schools can do to assist parents in gathering information and monitoring their children's school development will be welcomed and appreciated by all families. Technology provides such a vehicle. Voice-mail applications and information coupled with web-based systems that provide basic information about student academic progress and attendance allow parents and families to monitor school activities at a convenient time during their schedule.

Listening to messages from teachers about class happenings and assignments gives families the information they need to have discussions with their children regarding expectations. All of this makes monitoring children much

easier as the barrier of time no longer stands between the home and school. **Culture is the second largest barrier** to family engagement. Often, non-English-speaking families are intimidated or unsure of the school environment and are unclear as to how to gather information. Add to this idea that many of these families are socio-economically disadvantaged, and becoming engaged with school is an impossibility. Technology allows for messages and information to be retrieved by families in an arena of security within their homes. Messages can be broadcast and sent in native languages, allowing these families the opportunity to learn about school events. This type of communication sends a distinct message to families that the school cares about them and wishes them to be engaged. This message resonates loudly among non-English-speaking communities.

The third largest barrier to family engagement is parental and family uncertainty. Adults responsible for children often had negative experiences as a child and have imposed those experiences and attitudes onto their children. Families who are uncertain are less likely to be involved with school, attend school events, or monitor their children's progress. Families who are skeptical of a school or who, for whatever reason, are negative or distrusting of a school seem to only be involved when there is a problem with their child, often siding with their child and making it difficult for the school to establish positive relationships.

Providing a technological solution to these types of families eliminates the barrier of uncertainty because they can engage in "invisible involvement." Providing technological solutions to family engagement enhances the probability that these parents and families will monitor their students and this ability may increase the likelihood of schools establishing more positive relationships. Other barriers of school size, location, curriculum, adolescence, number of teachers, and peer relationships also provide unique challenges to educators. Technology can cut through these barriers as well. If families cannot get to the school because of transportation, technology allows them to stay involved. Teachers leaving messages designed to help families understand instructional concepts helps to relieve problems associated with curriculum. As children grow older and become more independent, they are less likely to be friendly to the idea of their parents' and families' physical presence and involvement with school. Technology becomes a wonderful resource for parents who wish to teach and respect their child's independence, yet, stay current in their educational lives.

3 Barriers to Family Engagement:

1. **Time**
2. **Culture**
3. **Parental and family uncertainty**

DETERMINING APPROPRIATE TECHNOLOGY

With numerous products on the market and a growing number of websites catering to school communication needs, determining how to select appropriate technology that will truly enhance the relationship between home and school becomes an important and significant step in building family engagement programs and practices. Understanding family engagement research, demographic data, and some technology knowledge should be coupled with a keen sense of the needs of one's own community. Research clearly establishes a need for family involvement in the educational lives of children. Much of that research points to the need of frequent and two-way communication between homes and schools and points to time, culture, curriculum, parental uncertainty, and issues of trust as barriers that need to be breached in order to create effective home-school relationships that support all children.

An important aspect of understanding the use of technology is the notion that more technology is not necessarily better in establishing two-way and frequent opportunities for communication. The salient issue is the degree of access to technology available to the community that surrounds the school and how best to establish communication with families. With the growing popularity of cell phones, the telephone continues to be the most popular technology available to the largest population in any given community and should be a central component when determining how to use technology to promote family engagement. Even with the explosion of the Internet and e-mail, telephone technology remains the best way to connect with all families. Designing a technology system that is accessible to everyone, every day, twenty-four hours per day, 365 days per year, is the advantage that no other means of home-school communication can offer.

FAMILIES, TEACHERS, AND THE TELEPHONE

At some time during every teacher's career, he or she sets a goal of making positive phone calls to or improving direct communication with parents. Although these goals are noble, they very often are not attained. The vast majority of teachers do not have access to a phone in their classrooms and, as a result, connecting with a teacher by telephone is very difficult for parents and families. It is as difficult for teachers to gain access to telephones to make or return phone calls. Often, a series of messages and callbacks play out over a series of days, until both parties are frustrated about their lack of ability to communicate. Administrators should do all they can to provide telephones in every classroom. This step alone will revolutionize the ability for educators to communicate with their external customers. It is also important to provide educationally designed voice-mail systems to further enhance the ability for teachers and families to communicate.

The concept of schools providing "homework hotlines" is not a new one. Using voice-mail technology to leave homework assignments is a popular use of technology. Expanding the use of this concept to include information to parents

about class activities, upcoming assignments, and how they can support their child's learning at home is an easy and effective way to improve the use of voice mail for those schools that have operative homework hotlines.

A typical "homework hotline" message might be:

"Tonight's homework for algebra I is chapter 1, pages 13–15. All students need to know the order of operations."

Even though this is a perfectly acceptable use of technology to simply list the homework assignment, it does little to include families in the varying aspects of children's school experience.

The following message, designed for parents, includes them in the process of their child's education:

"Hi. I am Mr. Smith, your child's period 2 algebra I teacher. Today is Monday, September 15th. We are working on the order of operations and tonight's homework is on pages 13–15 and should take twenty to thirty minutes to complete. The order of operations is a very important concept that all students need to know to continue to be successful in algebra this year. Parents, ask your children what the order of operations is; they should answer: multiplication, division, addition, and subtraction. Perhaps when you were in school the teacher helped you remember this by giving you the phrase, *my dear Aunt Sally*. We are having a quiz on Friday and when you call back I will tell you how that quiz went and what we will be doing next. If there is anything that I need to know about your child, please press the pound sign and leave me a message."

This message, which takes about a minute to record, provides insight into what the class is studying and how families can reinforce learning at home. It is also arguably more information than families would usually get about any aspect of their child's school day. Most importantly, it allows families to leave a message for the teacher with information about their children. It is essential that parents have the ability to leave messages directly for their child's individual teachers. Some systems allow for messages to be sent to a central location rather than directly to individual teachers in individual classroom "mailboxes."

The ability for parents and families to leave messages for teachers is important. Often, teachers can incorporate the approximate length of time homework should take and can invite parents to leave messages if their child spent too little or too much time. Also, it is a wonderful way for parents and families to give teachers information that will help the teacher work with the child. This concept is highlighted by the following story:

A classroom teacher arrived at school one day and even though her daily ritual of preparation included checking voice mails, the teacher had

other things to tend to and decided to check voice-mail messages later in the day. With the opening bell, the students filed into the classroom. One of the students, who was very rarely a problem for this teacher, arrived to his class and put his head down on the desk. After several attempts to engage the student, the teacher demanded that the student raise his head and participate in class. The student refused and continued to keep his head down. Frustrated, the teacher warned the student that further noncompliance would mean a discipline referral and removal from class. With that, the student stood up, knocking his chair over, grabbed his book bag, and stormed from the room muttering his lack of caring about whatever action the teacher would choose. It took several minutes to calm the class and refocus attention back on the lesson.

At the conclusion of the day and after the teacher wrote a discipline referral about the student earlier in the day, she finally checked her voice mail. There was one message that came in at midnight from the mother of the young man with whom she had difficulty earlier in the day. The message from the young man's mother alerted the teacher to the death of the beloved family dog. The mother went on to explain that all of the children had been up late crying, very upset about this situation, and that it seemed to affect her son the most, since he was the oldest and was just a toddler when the family got the dog. The boy and the dog were inseparable and the last night was the first night in eleven years the dog had not slept on her son's bed. Even though she encouraged her son to stay home, he insisted on going to school so that he would not miss his first class. The mother concluded the message by informing the teacher of where she could be reached should her son not be performing well in school. She indicated that she would come and pick her son up if the situation warranted. She thanked the teacher for her understanding and concluded the message.

- What would the classroom situation have been like had the teacher listened to her voice-mail message before the beginning of the school day?
- Would she have approached the difficult student a bit differently?

Hopefully, the answers to these questions are obvious and showcase the importance of technology allowing for two-way communication between home and school.

PUBLIC ACCESS TO SCHOOL INFORMATION

In addition to the important aspect of families having direct access to their children's teachers is the notion that the school must provide a great deal of information to the general public. Most consumers are accustomed to voicemail systems that provide a menu of options for information. The same concept can be used for school information as well. It is important for school administrators to determine the kind of information that families want to know and that is helpful to

families. Decisions have to be made to limit the options so callers do not become frustrated with an endless list of options. All systems should be designed to allow callers to input selections at any time, rather than listening to entire menus. Repeat callers do not need menus.

The following list of information is provided for administrators to consider in creating public information lines. The lines can be changed based on the time of year and the importance of the information. For example, enrollment and registration information is perhaps more important in the summer months than it is during the school year.

School hours	Meetings and events calendars
Administrator's names	PTA or other parent organization info
Voice mailbox numbers	Testing information and tips on testing
Principal's message	Unusual event or circumstances
Guidance and counseling information	Tip line information
Sports and activities schedules and updates	Emergency information
Community service and support information	Directory of voice mailboxes by keying
Fund-raising information	in the letters of the staff ' last names

Public Information Topics

School hours; administrator's names, voice mailbox numbers; principal's message; guidance and counseling information; sports and activities schedules and updates; community service and support information; fund-raising information; meetings and events calendars; PTA or other parent organization information; testing information and tips on testing; unusual event or circumstance information; tip line information; emergency information; and a directory of voice mailboxes that can be accessed by keying letters of the staff members' last names.

For every one of these suggested public information lines, there are numerous others that can be added. When marketed and advertised to the community, the use of the system increases and calls that need to be fielded by secretaries or other employees' decreases. The availability of this information twenty-four hours a day is also very accommodating to all schedules and greatly appreciated by families and the community at large.

Outbound Calling

Outbound dialing systems that can place attendance or general message calls are as common as homework hotlines. These dialers are usually inexpensive and provide a good way to mass-communicate important

information. **The drawback of these dialing systems seem to be centered on the limited messages that can be sent and are usually limited to one location or one person being able to set the outbound calling system up, thus constricting the potential uses of the system.** Outbound dialing should be a feature that is open to all staff members who have voice mailboxes on the system. When teachers, coaches, activities advisors, band directors, and other personnel all have outbound dialing capability, the opportunities to communicate are endless. Additionally, there should be a capability to create permanent and temporary “call groups” that can receive messages. A coach may establish a permanent call group of all team members, while a classroom teacher may wish to set up a temporary or one-time call group of students who might be struggling in a particular class.

With this kind of flexibility, the opportunity to communicate grows exponentially.

The following story demonstrates the usefulness of this type of communication. A marching band director took the band to a competition. Because the contest ran late and the band members had demanded a fast-food stop, the busses would be arriving at school almost two hours after the scheduled time. The band director, not wanting to face a parking lot full of angry parents, stopped at a pay phone and recorded a message to the marching band call group, indicating the new arrival time of the band. Within minutes, the message was being received in the homes of band members. Parents were able to stay at home and not worry about the late arrival of the busses.

This ability to communicate and share important information creates positive feelings and trust between parents and teachers and promotes the image of a caring school. Another important aspect of outbound calling features is the ability to send messages in multiple languages. While there is no technology yet available that automatically translates a message, there are systems that allow for messages to be recorded in different languages and, using the student management system, match the first language of the family to the appropriate message language. Simply put, families for whom Spanish is the primary language can receive an outbound message in Spanish as long as there was a message recorded in Spanish. Using the ethnicity code or other data available on the student management system makes this an easy process when the telephone and voice-mail system has the capability.

The last function of a successful outbound calling system is the ability for the system to leave messages on voice mail and answering machines, determine completed calls and hang-ups, and have the ability to be programmed to continue placing a call to a number that does not answer. Better quality systems provide a printout of successfully completed calls and any problems that the system experiences while trying to place the calls.

LINKING THE TELEPHONE TO THE INTERNET

Futurists continue to predict that we are not far from the time when all Americans will have access to the Internet in their homes, cars, televisions, and PDAs. For some, the future is already here; for others, the concept remains an Orwellian fantasy. Internet connectivity and operability has made its way to the majority of schools in the United States. More and more school districts and individual schools have posted websites with a large amount of good information for web visitors.

As familiar a tool as the Internet is to those who are computer and web savvy, it is not yet a means of communication for many, especially those who are non-English speakers and those whose socioeconomic status does not allow them the luxury of a home computer with world-wide web access. It is difficult to estimate the percentage of the American public that has access to computers and more difficult yet to determine the access to the Internet. The degree to which a particular community has access to Internet technology varies greatly from almost no family having access to all families having access. School leaders need to determine Internet access capabilities within their own communities to get accurate information.

There are numerous products available to schools that use the Internet to bring information to parents and families. Grades, assignments, and attendance information are the most popular, with lunch information, transportation information, or other individual student data also gaining in popularity. However, this information remains out of reach for those families who do not have access to the Internet. The key to solving this problem is to find the technology that provides the same information in a voice-digitized fashion so that families can retrieve it via the telephone.

The challenge to school leaders is to find a computer-based system that allows for both a telephone-based voice-mail system as well as an Internet based system with voice-digitization capacity to allow for Internet information to be retrieved by telephone.

THE TECHNOLOGY SOLUTION

School leaders should conduct extensive evaluations of the available technology that promotes school-family engagement. The technology system chosen should be one that is developed solely for educational use and not a system that was adapted to education from the business world. The company providing the product should be well versed in the educational needs of schools and families and should be able to demonstrate how their product reflects appropriate research and practice within schools and school districts. The successful product should have the ability to be accessed by both phone and Internet; ease of use, both by school staff and parents, should be a high priority.

The system should also have features that allow families to set thresholds for information delivery and decide the best way information should be communicated.

Each school and school district has different communities, and within those communities, families with different needs. The overarching principle in selecting technology that will best enhance family-school relationships is for school leaders to understand technology is not the sole answer or response to issues of family engagement, and that whatever choice is made, it becomes a logical step in a sequence of efforts by the school to promote more harmony and interaction between students, their families, and schools.

THE EFFECTS OF TECHNOLOGY ON FAMILY ENGAGEMENT

Stonewall Jackson's programs of family involvement are most noticeable when analyzing the interaction of students and parents and the school's technology system, and are by far the most far-reaching of the school's efforts to promote family interaction with the academic lives of their children. Students perceive their parents' ability to acquire this information on a regular basis as a positive aspect of being involved with school but students sometimes suffer negative repercussions of parents seeing poor grades or missed assignments. The use of technology has helped to change parental perceptions of the school. Students admit that the system has helped them to improve their levels of achievement, but readily admit they do not like the fact that their parents have access to this type of information at regular intervals throughout the year. The ease of use of the system benefits students and motivates them to stay current. Students report that parents use the system frequently and in many cases, the system is the stimulus for the educational dialog between families and their children.

CONCLUSION

The involvement of families in education for this new century will have to be both universal and frequent. To implement a computerized telecommunications system and have it be more than just a homework retrieval system, and to use all available technology to enhance family partnerships, has, at its nucleus, a belief in community-based education and a vision for student excellence.

School leaders who believe that all children can learn have attached to their vision the idea that family involvement including students, while not the only conduit to academic excellence, is critical to the success of every child. School leaders who see the technological revolution sweeping American schools know it to be a strong ally in promoting strong families and strong schools. Technology can open any school in America to the homes of students. With a solid leadership, vision, collaboration, and consistent communication with every family,

student, and teacher, educational leaders can foster a deeper and more meaningful association between families and schools.