



Citation for published version:

Goodall, JS 2016, 'Technology and school-home communication', *International Journal of Pedagogies and Learning*, vol. 11, no. 2, pp. 118-131. <https://doi.org/10.1080/22040552.2016.1227252>

DOI:

[10.1080/22040552.2016.1227252](https://doi.org/10.1080/22040552.2016.1227252)

Publication date:

2016

Document Version

Peer reviewed version

[Link to publication](#)

University of Bath

Alternative formats

If you require this document in an alternative format, please contact:
openaccess@bath.ac.uk

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Technology and School-Home Communication

Abstract

This paper examines the linked concepts of school-home communications, and parental engagement in children's learning, both of which are vital for supporting learning, particularly at times of transition. The paper examines the theoretical basis for both of these concepts. A distinction is drawn between communication (which can be simply the giving/receiving of information) and dialogue, which requires active participation by both parties. The literature in the fields of parental engagement, communication and technology is examined, including the importance of support for children above primary age, leading to a series of principles for the introduction of technology in school-home communication. The introduction of technology into the life of the school and communication with families can represent a considerable cost, both in terms of finance and in terms of teachers' time, and therefore decisions in these areas should be made on the basis of the best possible evidence. The paper concludes with challenges and recommendations for policy makers, researchers and practitioners.

1. Introduction

Support for the learning of young people requires communication between school staff and children's families/carers. This article examines and analyses school-home communication, with a particular emphasis on how that communication can be supported by emerging, digital technologies.

This article deals with school-home communication, rather than the perhaps more logical, home-school communication. This is deliberate, as the communication under review originates, in structure if not always in content, with the schools themselves. While parents

may initiate contact with schools, this article investigates the literature which refers specifically to technology based systems put in place by schools to enable communication with families. This may range from the fairly basic provision of a website or published email addresses for staff, to much more elaborate systems which allow schools to text individual parents or entire cohorts, or systems which allow schools to publish information which parents then access (either through proprietary systems, “apps”, or through platforms such as Facebook). Often, these systems represent a considerable outlay in terms of resources, both financial and time, for schools. As Stevenson points out, there has been a gap between policy, high level rhetoric and plans, and grassroots take up and use of technology, and many of the successful interventions mentioned in the research are highly dependent on outside funding (Stevenson, 2011). One of the aims of this paper, then, is to examine what is available to schools and what will be of most use, particularly considering the financial constraints now facing schools. Throughout this article, “technology” is used to mean “electronic technology”, in other words, technology which is dependent electronic means of distribution (email, internet based applications, etc.).

Type of article

This article has many of the characteristics of a traditional literature review: Sources were originally found through a systematic search of online databases, with parameters set for age of the article (published since 2000, considering the pace of change in the field of technology itself), controlled lists of search terms, and evaluated against criteria, including subject matter and sample size. However, it soon became clear that this method would not suffice, and the search was expanded. The majority of sources used here are in fact found through following citation trails in the works originally found. It is also worth noting that this paper cites a number of doctoral theses and conference papers. This reflects both the fast paced nature of

the field but also practitioner interest in understanding the field through a critical, academic lens. This article adds to this understanding.

There are four main sections, investigating the concepts of communication, parental engagement, school-home communications and the use of technology in such interactions. These sections are followed by a discussion of the principals arising from the literature, which leads to challenges and recommendations for policy, practice and research.

2. Communication

Before we can examine communication between schools and families, we must have clear definitions from which to begin. Beattie and Ellis (2014) draw on a large body of research to come to a basic definition of communication, saying that it “occurs when an organism (the transmitter) encodes information into a signal which passes to another organism (the receiver) which decodes the signal and is capable of responding appropriately” (pg. 3). This definition represents an amalgam of a wide body of research; for a more detailed history of debates around the concept of communication, see Dainton and Zelly (2014).

This is, however, not the end of the process, for the definition continues that the receiver, “is capable of responding appropriately”. While this does not imply that the recipient must, indeed, reply to the information or respond to it for communication to take place, it does mean that a response must be possible. Such a response could be the assimilation of the knowledge (information, signal) from the originator. It might, however, also be a more active response. Tubbs and Moss (1994) provide a useful barometer of the effectiveness of communication when they suggest that in the most effective instances, the information (“stimulus”) received is very close to what the originator intended to send (and, therefore, what the originator intended to be received). This adds a further nuance to the definition, as it makes clear that the information should mean the same thing to sender and recipient.

This, then, brings us to a conceptualisation of communication as a signal passed from one person to another; a signal which the second person is capable of understanding and to which they could, potentially, respond.

It is important to note that communication takes place whether the response is forthcoming or not; “dialogue” would require such a response but communication (perhaps as the precursor to dialogue) does not.

3. Parental engagement

The case for the value of parents engaging with the learning of their children has been made cogently and repeatedly in the literature (Adamski, Peiro, & Fraser, 2005; Beatty, 2003; Berthelsen & Walker, 2008; Borgonovi & Montt, 2012; Carpentier & Lall, 2005; Catsambis, 2001; Desforges & Abouchaar, 2003; Fan & Chen, 2001; Gonzalez-DeHass, Willems, & Holbein, 2005; Hill & Tyson, 2009; Ho Sui-Chu & Willms, 1996; Hoover-Dempsey, Battiato, Walker, Reed, DeJong, & Jones, 2001; Jeynes, 2012; Jeynes, 2007). Fan and Chen (2001), for example, found a strong (30%) correlation between parents’ involvement and the achievement of their children. These results are echoed by others such as Epstein (Epstein & Sheldon, 2000; Epstein, 2005; Epstein & Sheldon, 2002), Jeynes (2012; Jeynes, 2007), Hoover-Dempsey (Hoover-Dempsey et al., 2001). The strength of the literature is such that, in a recent review, See and Gorard examined the research base around interventions to support children’s academic outcomes and found that only interventions to support parents’ engagement which their children’s learning had enough evidence to warrant continued use and funding (Huat See & Gorard, 2015; See & Gorard, 2014).

Henderson and Mapp (2002) have helpfully distilled much of this literature, to show that schools which are successful in engaging a wide range of families share three traits, which can be further collapsed to say that such schools work collaboratively and respectfully with

families and communities whom they know well (Goodall & Vorhaus, 2011; McDermott & Rothenberg, 2004).

The value of parental engagement itself relies on another set of theories, arising out of the sociocultural theory of learning, expounded by Vygotsky (Vygotskiĭ & Cole, 1978). The socio-cultural theory of learning, as Marshall and Jackson (2015) explain, holds that at the outset of an activity, a beginner relies on others who have more experience, gradually becoming more responsible for their own learning. This is an apt description of the process of education, per se, as a formalised, structured instance of the larger concept of learning. As a society, with England being a case in point, we insist that children and young people remain in schooling (a further subset of education) until the age of 16 or 18, yet expect that learning will be lifelong (Aspin, Chapman, Hatton, & Sawano, 2012; London, 2011).

The connection to parental engagement in children's learning is emphasized by this model, particularly as research has affirmed the value of parental attitudes toward learning (and education and schooling) to children's development, behaviour and achievement (Cummings, Laing, Law, McLaughlin, Papps, Todd, & Woolner, 2012; Desforges & Abouchar, 2003; Englund, Luckner, Whaley, & Egeland, 2004; Henderson & Mapp, 2002; Jeynes, 2012; Sylva, Melhuish, Sammons, Siraj, & Taggart, 2008). Parents, in essence, model learning and the value of learning for their children, who eventually take on those same skills and values. Children whose parents are involved in their learning have been consistently shown, over a variety of studies, to achieve higher marks, have better school attendance, behaviour and social skills, to adapt better to school and to continue in education longer than their other peers. While White, middle class parents are more likely to be involved in a relationship with their children's school, or even with their schooling (Goodall & Montgomery, 2013), families from all backgrounds are known to be engaged with their children's learning (Henderson &

Mapp, 2002); however, for many families, this engagement could be increased, to the benefit of the child.

It is important to note here that the engagement which has the greatest benefit to children takes place between parents and young people, rather than between parents and school staff (Desforges & Abouchar, 2003; Goodall & Montgomery, 2013; Harris & Goodall, 2007; Sylva et al., 2008). It is, then, this engagement of parents with their children's learning which requires the greatest support (Goodall & Montgomery, 2013)

Olmstead (Olmstead, 2013) points out that the socio-cultural theory also highlights the value of school-home interaction, as signalling the value of education (or, at the least, schooling) to the child. Learning, in the social constructionist view, is seen as situated in context (Olmstead, 2013); in relation to parental engagement with children's learning, the context needs to be understood particularly as that of the home, not the school.

Parents' belief in their own ability to be of support to their children's learning would appear to be an important link in this chain (Georgiou & Tourva, 2007; Hornby & Lafaele, 2011; Smith, Wohlstetter, Kuzin, & De Pedro, 2011). Bandura (1977) defined the concept of self-efficacy, the belief in the power of the individual to affect outcomes. Research has shown an increase in parental desire to support their children's learning, at the same time as there is a decrease in parental confidence to do so (at least in relation to homework) (Peters, 2008) .

Drawing these theories together, parents' engagement in their children's' learning serves to support that process, as children develop toward independence. The engagement of parents, however, rests on their own belief in their ability to affect change.

4. School-home communications

“Communication is at the heart of the family-school relationship”(Bouffard, S. M., 2008, 1)

If we accept that children will achieve better outcomes if families and schools work together, this requires communication (and indeed, dialogue (Harris & Goodall, 2007)) between all the parties (Bouffard, S., 2008; Mazza, 2013; Weise, Lopez, & Caspe, 2006).

Ho et al define parent-school communication as “a process that exchanges information to develop consensus, coordinate action, fulfil stakeholder needs, and achieve effective learning goals” (Ho, Hung, & Chen, 2013, 106). This is a much more detailed and specific definition than the one given above, and is important for those differences. From the outset, Ho et al see the process not as one way – from originator to receptor – but as two way, as being an exchange of information between the two (Ho et al., 2013). This assumes that neither party is wholly passive in the relationship; that is, both parties not only receive information, but actively give information. Their definition goes on to assume that the aim of this communication is the achievement of consensus, although they do not specify what this consensus concerns.

In terms of schools’ communication with parents, the phrase, “encodes the signal” used above in the definition of communication, becomes important. It is known that parents often find information from schools to be somewhere on a continuum from slightly unclear to baffling (Harris & Goodall, 2007; Harris & Goodall, 2008). From the definition given above, it would seem that if the “signal” sent out by schools cannot always be “decoded” by parents, or it does not mean the same things to the sender and the recipient, (e.g., “Your child has obtained a level 5 in maths” when the parents have no way of knowing if level 5 is appropriate for their child) then communication has not occurred. It would further seem that at least the majority of the onus for ensuring that the signal is capable of being decoded by the recipient rests with the sender; to put it another way, schools need to ensure that parents can make sense of what is communicated to them.

In relation to schools and families, the information relayed would relate (at least in some way) to learning, and the receiver would be the parents of the child. (In home-school communication, of course, the roles would be reversed, and in a dialogue between the two, the roles would shift on a frequent basis, as needed).

The aim of school-home communication is ultimately the good of the pupil (Halsey, 2005; Johnson, 2013); parental support as we have seen, is critical for good outcomes for children, particularly those facing socioeconomic challenge (Harris & Goodall, 2009; Hurwitz, Lauricella, Hanson, Raden, & Wartella, 2015). Children are more supported to reach the best outcomes when parents and teachers work together and such cooperation is fostered by, and founded on, communication (Ho et al., 2013).

When parents receive positive, useful communication from teachers and other staff, it is easier to build “instructional partnerships” around the learning of the child, supporting parents’ belief in their own ability to support learning (Olmstead, 2013), which, as we have seen, again feeds into children’s achievement. Strong connections between home and school are important for many aspects of children’s development (González-Patiño, Poveda, & Morgade, 2012). Communication between schools and parents, which is effective and frequent, has been shown to increase children’s academic achievement (Moore, 2015). Teacher communication with parents has been shown to be related to improvements in student outcomes in both maths and literacy (Henderson & Mapp, 2002), as well as achievement overall (Shute, Hansen, Underwood, & Razzouk, 2011). Research has noted that parental involvement with schooling and engagement with learning can be positively affected by outreach initiated by schools (Georgiou & Tourva, 2007). Epstein’s well known explanation of this phenomena is one of “overlapping spheres” (Epstein, 2005). The situation is, however, more complex than this. As long ago as 1987, Epstein (1987) suggested that there were two types of communication between schools and families:

institutional and individual. Institutional communication is aimed at all parents (or a large group, such as a year group), and comes (or at least is perceived to come) from the organisation, rather than a particular person. Individual communication, on the other hand, revolves around a specific child and involves individual teachers and families.

Halsey (Halsey, 2005) found that staff and parents gave different interpretations to the same form of communication, which returns us to the concept of encoded – and decoded - signals. While teachers saw institutional communications such as newsletters, as invitations to parents to become involved in the life of the school, parents instead regarded these as announcements, rather than direct invitations. This reiterates the point that just because the means of communication exist, does not ensure that communication will take place or yet that this communication will be effective (Passey, 2011). As we have seen above, for communication to be effective, the sender and receiver should take the same message from the communication; this does not always appear to be the case in school-home communication.

In relation to institutional communication, which parents tend to see as addressed to an entire group than rather to them, personally, it should be noted that this does not constitute a failure of communication, as defined in this paper. Parents are still receiving the information and are responding, even if, as above, that response is an assimilation of information. In any large scale online interaction, the majority of participants are not active, but rather are termed “lurkers” (Blau & Hameiri, 2012, 702); that is to say, they absorb information provided, but do not add to that information or engage with others around it online. An example would be the online encyclopaedia, Wikipedia, which has almost 350 million unique users every month, but has only 70,000 contributors (Sandberg & Hofferth, 2005). However, the communication, although it exists, may not be as effective as it could be, if it is not received in the mode (invitation) that the sender intended.

5. Technology, Communication and Parental Engagement with Children's Learning

Since the introduction of the first prototype smartphone in 1992 (Sager, 2012), the range of technological means of communication has grown, exponentially – in the first instance due to advances in hardware, such as the advent of the smart phone and portable devices such as tablet computers, secondly, with the increasing speed of transmission of data, and in the latter instance, with the proliferation of ways to use these devices, applications, generally called, “aps” (Edwards-Gaura, Whitaker, & Self-Brown, 2014). Ofcom suggests that 72% of homes have fixed broadband (Ofcom, 2014b) and that more than half the adult population has a smartphone (Ofcom, 2014a). (This increase in broadband in the home is of particular importance for parental engagement in children's learning, as Hollingworth et al have pointed out that parents with this access tended to be quite positive about its effect on children's learning (Hollingworth, Mansaray, Allen, & Rose, 2011).

These innovations allow not only the asynchronous exchange of information, such as is available in email, but also offer uses the opportunity to share pictures and videos, or engage in face to face, real time communication (such as face time and skype).

It is important to highlight that the aim of this article is not to suggest that means of communication which rely on technology are the only means of communication between schools and families, nor yet that these should be the primary means; as Mazza points out, these means “cannot build relationships on their own” as technological communication lacks information from tone of voice, body language and eye contact (Mazza, 2013, 86). It is possible that newer applications, such as Skype and Facetime could overcome at least some of these barriers (Thompson, Mazer, & Flood Grady, 2015).

However, these methods of communication do allow parents and schools to communicate at times which are convenient to both (particularly asynchronous methods) and to send and

store information easily and quickly, giving parents more of a chance to be involved in their children's learning (Ho et al., 2013). Hurwitz et al found that a simple texting system made a significant impact on parental support of young children's learning (Hurwitz et al., 2015). BECTA pointed out in 2010 that technology can help parents engage with their children's learning, keep up to date with what is happening at school and, as classroom practice has changed significantly since many parents were in school, how things are now taught (BECTA, 2010); a point reiterated by others (Blau & Hameiri, 2012; Crozier & Davies, 2007; Merkley, Schmidt, Dirksen, & Fuhler, 2006) . Lewin and Luckin make the point that as parental needs are complex, interventions should be flexibly designed and should concentrate on the needs, rather than the technology used to fulfil those needs (Lewin & Luckin, 2010) (See also Hollingworth et al., 2011); the range of technologies now available to schools allows for this flexibility.

Even though we have highlighted above the opportunities technologies offers for communicating with parents who might not usually interact with schools to any great extent, this is not a panacea. While internet use has risen dramatically, with hours spent online per week doubling over the last ten years, and 66% of adults using a smart phone to access online contents (Ofcom, 2015) and 80% of adults having access to broadband (Ofcom, 2015), there are still families without access, and even those with access to the content may not have the requisite language or technological skills to benefit greatly from the information produced by schools. Bouffard also found that access to tools does not necessarily equate to use of those tools, at least use of the tools to communicate with schools. Parents with higher levels of education and better incomes were more likely to both have access to the internet and to use it when they did have access (Bouffard, S., 2008).

Bouffard's (2008) study covered a very large sample (14,387 pupils at about age 16 – 10th grade). Using national database statistics and controlling for previous achievement and other

family involvement, Bouffard found that students whose families used internet based communications with schools “demonstrated more positive outcomes two years later” (Bouffard, S., 2008, 3). Interestingly, Bouffard found that such communication did lead to more parent-child discussion about education but that this did not, in turn, seem to be related to outcomes for grade 12 students (yet other research has found that such discussions are, indeed, of value in relation to young people’s achievement (Borgonovi & Montt, 2012; Shute et al., 2011). All groups of pupils did seem to benefit if their parents used this type of communication, however. Bouffard (2008) found that these internet based means of communication tended to be used mainly for “neutral” or “positive” interactions to inform parents, rather than for alerting parents to problems (pg. 4).

The importance of technology for communication in families with older children

Research has shown for some time that parental engagement with children’s learning tapers off as children age (Deslandes & Bertrand, 2005; Halsey, 2005; Hornby & Lafaele, 2011; Johnson, 2013; Moore, 2015; Simon, 2004). By the time they are in secondary school, parents report feeling that they do not know how to help with children’s learning, and feel that they do not receive enough support from schools to do so (Goodall, 2014). This is coupled with an increasing desire for independence on the part of the young people themselves (Harris & Goodall, 2007; Harris & Goodall, 2008). Yet parental engagement with older children’s learning still pays dividends; conversations between parents and mid teenagers have been correlated to young people’s engagement with literacy (OECD, 2012). As Bouffard points out, technology can allow parents of such young people to have the information from and contact with schools that will help support learning, while respecting both the independence of the pupil and the increasingly busy lives of many parents (Bouffard, S., 2008); results that were mirrored in Lewis’ (much smaller) study (2003), and by Rogers and Wright (2008). There is other evidence to suggest that technology based forms of

communication can positively support the engagement parents of children of this age (high school, secondary school) (Watkins, 2013).

Lewis (2003) designed and implemented a web based tool to support parental engagement with homework, and found that it had a positive effect on both students' return rates and the accuracy of the work done. Importantly, Lewis found that, "parents felt better informed" and "believed this information could positively affect student progress" (Lewis, 2003,1). This ties in with what we have seen above about the importance of parental self-belief and efficacy for supporting the learning of their children.

Tan (2012) found that giving parents access to an online grade book increased parental contact with teachers; parents having access to information about their children's progress acted as a spur to communicate with teachers, which can help to build the partnerships mentioned earlier.

In a similar project, Wilson found that giving parents access to information on their children's work, marks and attendance increased the volume of communication between school and home (Wilson, 2005), results that mirror previous findings from Hampton et al (2002). Hampton's work, however, makes an interesting point: parents of high performing students felt less need to access the online systems (as, in this study they were primarily used to check on progress and marks). This again shows the value that technology might hold for parents of lower performing students or students facing challenges.

These technologies offer a way for schools to support parental engagement, perhaps particularly importantly for those groups which are often labelled as "hard to reach" (Crozier & Davies, 2007; Goodall, 2013), as these innovations do not require parents to be physically present or to initiate contact with the schools (Bouffard, S. M., 2008; Kim, Hagashi, Carillo, Gonzales, Makany, Lee, & Gàrate, 2011). These technologies offer the possibility of giving information to multiple families at once (websites, Facebook, mass emails and texts), more

targeted information (such as to the parents of a year group or sports team) or individual, specific communication (email, individual texts and emails) (Bouffard, S. M., 2008). For instance, Tan found that 85% of the parents in a small scale survey used email as their main means of communicating with teachers (Tan, 2012), a finding supported in other research (Johnson, 2013).

Technology now offers both longstanding and new ways for schools to communicate with parents, to support the learning of their children, yet not many schools seem to be taking advantage of the opportunities now on offer to them. Olmstead suggest this may be due to a lack of training on the part of teachers, or due to a lack of research in this area (Olmstead, 2013). Ho et al (Ho et al., 2013) also point out that it takes time for people to adopt (and adjust to using) new technologies.

There is a good deal of research around how and why people accept technology (Ertmer, Ottenbreit-Leftwich, Sadik, Sendurur, & Sendurur, 2012; Ho et al., 2013). Rogers' (Rogers, 2003) Diffusion of Innovation theory gives five classifications of adopters, ranging from the innovator at the early end of the spectrum and the laggards at the other. Dori et al. (2002) speaking specifically of (science) teachers, have four categories, from the initiator, analogous to Rogers' innovator, to the antagonist (who is more strident than Rogers' laggards, and simply refuses to use technology at all).

I would also add to this other suggested explanations for slow adoption of technologies, such as a lack of knowledge about the possibilities on offer, cost implications for some of the proprietary products and a lack of understanding of the need of change in the first place. This is shown for example in the difference Bouffard noted between the perceptions of principals and parents about the use of the internet as a medium for school-home communication (Bouffard, S. M., 2008). Further, as Kim remarks (Kim et al., 2011) technology, insofar as it relates to human actions, and interactions, cannot be treated in

isolation, considering just the physical artefact under discussion. Rather, there are socio-cultural values to be examined, in relation to learning (and, for our purposes, in relation to schools, communication and parental engagement).

6. Principles for the introduction of technology

The introduction of technology into school home communications has, to a great extent, already happened; many if not most schools have webpages, many have text messaging systems and faculty email addresses available for parents to use. The nature of school-home communication has already begun to change, due to advances in mobile technology, such as smart phones (Thompson et al., 2015). However, based on the literature around parental engagement, it is important that schools adopt a holistic, overarching view and practice, championed by senior leaders (Goodall & Vorhaus, 2011). As such, it will be important for schools to undertake any moves toward the inclusion of technology as they would any other change, with clear aims and objectives, and understanding of the change process. Increasing the connection between schools and homes is one of the imperatives for improving schooling and raising achievement (Harris & Goodall, 2008; Hohlfeld, Ritzhaupt, & Barron, 2010; See & Gorard, 2014).

The principals elaborated in research relating to parental engagement with children's learning should inform schools when taking decisions about the use of technology for home-school communications. The aim of such communications, ideally, is not merely to inform parents, but rather to support their effective engagement with the learning of their children.

Communications technology can be an integral part of this process, but it must be understood and well managed in its introduction and use. To this end, any use of technology must support and if possible, increase parental self-efficacy around supporting learning; it must be based on a relationship of trust and mutual respect between parents and school staff. It

should be led from the front by senior members of staff, and include training for all members of staff as appropriate (Goodall & Vorhaus, 2011). Points of transition, particularly between phases of schooling, present particular areas of tension for families (Harris & Goodall, 2009); it is therefore important that schools think more widely than just their own students in relation to home school communication, but include in their deliberations other schools and agencies.

7. Recommendations and challenges

The following list comprises not just recommendations but also challenges, as many of the recommendations require greater information or ground laying to be effective.

Recommendations and challenges for policy

On the basis of the research cited here, it would seem imperative that some of the work previously carried out by BECTA be continued, both in term of provision of information and research. Policy makers should take into account data not only about the value of parental engagement but also that relating to the digital divide (Riddlesden & Singleton, 2014); ensuring that new programmes to support the use of technology in schools help to alleviate, rather than exacerbate, the results of unequal access across the country.

Recommendations and challenges for research

While a good deal of literature exists around the use of technology in schools, most of this refers to pedagogical, teaching benefits, rather than use as a tool for communication. As has been demonstrated above, schools and families are increasingly turning to electronic means of communication; practice, as is not unusual, is outstripped the research base which should support it. There is an urgent need for research, both qualitative and quantitative, around the use and efficacy of technologically based school-home communication.

Recommendations for practice

The research literature is not yet sufficient to recommend any one means or technology for communicating with parents, And, in fact, it may never be able to do so, as each school and each cohort of parents, is unique and will require solutions which are appropriate at a given time (Goodall & Vorhaus, 2011). However, some general observations can be gleaned.

Any choice of technology must be founded on knowledge of parental needs, capabilities to use and access to technologies; therefore no decision on the use of these should be taken without careful investigation and discussion with parents.

Further, the introduction of technology based communications strategies in schools can represent a large change in working practices and beliefs. As with any other large scale change, there is a need to manage the process of change in ways which are appropriate to individual institutions and practitioners. Every school will have stakeholders who react to technology throughout the range mentioned above, from early adopters to laggards; any programmes involving such change must support staff and parents throughout the spectrum. As many schools are already utilising technology to communicate with families, for all the reasons given above and doubtless, for many others, there is also a need for practitioner based research and particularly for school based evaluation of these tools, Schools often do not effectively evaluate training of interventions (Goodall, Day, Lindsey, Muijis, & Harris, 2005). However, considering both the importance of school-home communication and the not insubstantial financial outlay that some systems require, there is a need for schools to not only evaluate their practice in this area but also to share the findings of such evaluations with other practitioners.

Contribution

This paper contributes to the discussion around the use of electronic technology for school-home communication by examining the theoretical basis on which such communication rests, and by connecting the literature in the fields of communication theory, parental engagement

and technological support for learning, to highlight both the importance of technology for this form of communication and some of the issues arising for policy, practice and future research.

References

- Adamski, A., Peiro, M. M., & Fraser, B. J. (2005). *Relationships between parental involvement in schooling, classroom environment, and students' attitudes and achievement*.
- Aspin, D. N., Chapman, J. D., Hatton, M., & Sawano, Y. (2012). *International handbook of lifelong learning* (Vol. 6): Springer Science & Business Media.
- Bandura, A. (1977). Self-efficacy: toward a unifying theory of behavioral change. *Psychological review*, 84(2), 191.
- Beattie, G., & Ellis, A. (2014). *The psychology of language and communication*: Psychology Press.
- Beatty, S. E. (2003). *A randomised comparison trial to evaluate an in-home parent-directed drug education intervention*. Retrieved from E-journal link(s):
http://elinks.dialog.com/servlet/LinkManager.StarLinksDirector?&year=2003&lm=false&rel=v3&userid=AAAVYK%7C_HWMQ7QU4GVXWDJAGDUW&publ=openURL8302821&aulast=Beatty&pf_id=0&app=EDUCATAH&snr=20090718_143708_fb5e3_20&db=AUEI&title=Publisher%3A+Curtin+University+of+Technology&atitle=A+randomised+comparison+trial+to+evaluate+an+in-home+parent-directed+drug+education+intervention. (Full text available at WebBridge)
- BECTA. (2010). "I'm stuck, can you help me?". Retrieved from Coventry:
file:///C:/Users/My%20Laptop/Downloads/download6a12%20(1).pdf
- Berthelsen, D., & Walker, S. (2008). Parents' involvement in their children's education. *Family Matters*(79), 34-41. Retrieved from E-journal link(s):
http://elinks.dialog.com/servlet/LinkManager.StarLinksDirector?issn=1030-2646&issue=79&page=34&epage=41&year=2008&lm=false&rel=v3&userid=AAAVYK%7C_HWMQ7QU4GVXWDJAGDUW&publ=openURL8302821&aulast=Berthelsen&pf_id=0&app=EDUCATAH&snr=20100212_100649_910dd_29&db=AUEI&title=Family+Matters&atitle=Parent%27+involvement+in+their+children%27s+education. (Full text available at WebBridge)
- Blau, I., & Hameiri, M. (2012). Teacher–families online interactions and gender differences in parental involvement through school data system: Do mothers want to know more than fathers about their children? *Computers & education*, 59(2), 701-709.
- Borgonovi, F., & Montt, G. (2012). Parental involvement in selected PISA countries and economies.
- Bouffard, S. (2008). Tapping into technology: The role of the internet in family–school communication. *Harvard Family Research Project*.
- Bouffard, S. M. (2008). *Tapping into technology: The role of the Internet in familyschool communication*. Retrieved from Cambridge, MA:
- Carpentier, V., & Lall, M. (2005). *Review of successful parental involvement practice for 'hard to reach' parents*. Retrieved from London:
- Catsambis, S. (2001). Expanding knowledge of parental involvement in children's secondary education: connections with high school seniors' academic success *Social Psychology of Education*, 5, 149-177.
- Crozier, G., & Davies, J. (2007). Hard to Reach Parents or Hard to Reach Schools? A discussion of home-school relations, with particular reference to Bangladeshi and Pakistani parents. *British Educational Research Journal*, 33(3), 295-313.

- Cummings, C., Laing, K., Law, J., McLaughlin, J., Papps, I., Todd, L., & Woolner, P. (2012). Can changing aspirations and attitudes impact on educational attainment. *York: Joseph Rowntree Foundation*.
- Dainton, M., & Zelay, E. D. (2014). *Applying communication theory for professional life: A practical introduction*: Sage publications.
- Desforges, C., & Abouchar, A. (2003). *The impact of parental involvement, parental support and family education on pupil achievement and adjustment: A literature review* (Report Number 433). Retrieved from
- Deslandes, R., & Bertrand, R. (2005). Motivation of parent involvement in secondary-level schooling. *The Journal of Educational Research, 98*(3), 164-175.
- Edwards-Gaura, A., Whitaker, D., & Self-Brown, S. (2014). Can social networking be used to promote engagement in child maltreatment prevention programs? Two pilot studies. *Western Journal of Emergency Medicine, 15*(5), 575.
- Englund, M. M., Luckner, A. E., Whaley, G. J., & Egeland, B. (2004). Children's achievement in early elementary school: Longitudinal effects of parental involvement, expectations, and quality of assistance. *Journal of Educational Psychology, 96*(4), 723.
- Epstein, J., & Sheldon, S. (2000). *Improving student attendance: effects of family and community involvement*. Paper presented at the Annual Meeting of the American Sociological Society, Washington.
- Epstein, J. L. (1987). Toward a theory of family-school connections: Teacher practices and parent involvement.
- Epstein, J. L. (2005). A case study of the partnership schools comprehensive school reform (CSR) model. *The Elementary School Journal, 106*(2), 151-170.
- Epstein, J. L., & Sheldon, S. B. (2002). Present and accounted for: Improving student attendance through family and community involvement. *The Journal of Educational Research, 95*(5), 308-318.
- Ertmer, P. A., Ottenbreit-Leftwich, A. T., Sadik, O., Sendurur, E., & Sendurur, P. (2012). Teacher beliefs and technology integration practices: A critical relationship. *Computers & education, 59*(2), 423-435.
- Fan, X., & Chen, M. (2001). Parental Involvement and Students' Academic Achievement: A Meta-Analysis. *Educational Psychology Review, 13*(1), 1 - 22.
- Georgiou, S. N., & Tourva, A. (2007). Parental attributions and parental involvement. *Social Psychology of Education, 10*(4), 473-482.
- Gonzalez-DeHass, A. R., Willems, P. P., & Holbein, M. F. D. (2005). Examining the Relationship Between Parental Involvement and Student Motivation. *Educational Psychology Review, 17*(2), 99 - 123.
- González-Patiño, J., Poveda, D., & Morgade, M. (2012). Constructing parental involvement in school: Examples from an action research Project using web-based tools. *Papers infancia_c, 1*, 1-9.
- Goodall, J. (2013). Break down the barriers to the "hard to reach". *Leading Parent Partnership Award Newsletter, 6*. <http://www.lppa.co.uk/index.php/news-and-information/lppa-newsletters/lppa-newsletter-issue-6-spring-2013/break-down-the-barriers-to-the-hard-to-reach/> Retrieved from <http://www.lppa.co.uk/index.php/news-and-information/lppa-newsletters/lppa-newsletter-issue-6-spring-2013/break-down-the-barriers-to-the-hard-to-reach/>
- Goodall, J. (2014). School-Home Communication: Texting.
- Goodall, J., Day, C., Lindsey, G., Muijis, D., & Harris, A. (2005). *Evaluating Impact of Continuing Professional Development* (RR659). Retrieved from London:
- Goodall, J., & Montgomery, C. (2013). Parental involvement to parental engagement: a continuum. *Educational Review*(ahead-of-print), 1-12.
- Goodall, J., & Vorhaus, J. (2011). *Review of best practice in parental engagement*. Retrieved from London:

- Halsey, P. A. (2005). Parent involvement in junior high schools: A failure to communicate. *American Secondary Education*, 57-69.
- Hampton, L. F., Anderson, C., & Sigman, D. (2002). The Impact on Student Academic Achievement Using an Online Process Provided to Students and Parents.
- Harris, A., & Goodall, J. (2007). *Engaging Parents in Raising Achievement. Do Parents Know They Matter?* (DCSF-RW004/DCSF-RBW004). Retrieved from
- Harris, A., & Goodall, J. (2008). Do parents know they matter? Engaging all parents in learning. *Educational Research*, 50(3), 277 - 289.
- Harris, A., & Goodall, J. (2009). *Helping Families Support Children's Success at School*. Retrieved from London:
- Henderson, A. T., & Mapp, K. L. (2002). *A new wave of evidence: The impact of school, family and community connections on student achievement*. Retrieved from Austin, Texas:
- Hill, N. E., & Tyson, D. F. (2009). Parental involvement in middle school: a meta-analytic assessment of the strategies that promote achievement. *Developmental psychology*, 45(3), 740.
- Ho, L.-H., Hung, C.-L., & Chen, H.-C. (2013). Using theoretical models to examine the acceptance behavior of mobile phone messaging to enhance parent–teacher interactions. *Computers & education*, 61, 105-114.
- Ho Sui-Chu, E., & Willms, J. D. (1996). Effects of parental involvement on eighth-grade achievement. *Sociology of education*, 69(2), 126 - 141.
- Hohlfeld, T. N., Ritzhaupt, A. D., & Barron, A. E. (2010). Connecting schools, community, and family with ICT: Four-year trends related to school level and SES of public schools in Florida. *Computers & education*, 55(1), 391-405.
- Hollingworth, S., Mansaray, A., Allen, K., & Rose, A. (2011). Parents' perspectives on technology and children's learning in the home: social class and the role of the habitus. *Journal of computer assisted learning*, 27(4), 347-360.
- Hoover-Dempsey, K. V., Battiato, A. C., Walker, J. M., Reed, R. P., DeJong, J. M., & Jones, K. P. (2001). Parental Involvement in homework. *Educational Psychologist*, 36(3), 195-209.
- Hornby, G., & Lafaele, R. (2011). Barriers to parental involvement in education: an explanatory model. *Educational Review*, 63(1), 37-52. doi:10.1080/00131911.2010.488049
- Huat See, B., & Gorard, S. (2015). The role of parents in young people's education—a critical review of the causal evidence. *Oxford Review of Education*(ahead-of-print), 1-21.
- Hurwitz, L. B., Lauricella, A. R., Hanson, A., Raden, A., & Wartella, E. (2015). Supporting Head Start parents: impact of a text message intervention on parent–child activity engagement. *Early Child Development and Care*(ahead-of-print), 1-17.
- Jeynes, W. (2012). A Meta-Analysis of the Efficacy of Different Types of Parental Involvement Programs for Urban Students. *Urban Education*, 47(4), 706-742. doi:10.1177/0042085912445643
- Jeynes, W. H. (2007). The relationship between parental involvement and urban secondary school student academic achievement: A meta-analysis. *Urban Education*, 42(1), 82.
- Johnson, P. (2013). The Impact of Technology on Parental Involvement: Perceptions of teachers and guidance counselors regarding the impact of a parent portal component of a student information system on parental involvement at the high school level.
- Kim, P., Hagashi, T., Carillo, L., Gonzales, I., Makany, T., Lee, B., & Gàrate, A. (2011). Socioeconomic strata, mobile technology, and education: A comparative analysis. *Educational Technology Research and Development*, 59(4), 465-486.
- Lewin, C., & Luckin, R. (2010). Technology to support parental engagement in elementary education: Lessons learned from the UK. *Computers & education*, 54(3), 749-758.
- Lewis, A. R. (2003). Using communications technology and parental involvement to improve homework completion and quality. *Action Research Exchange*, 2(1).
- London, M. (2011). *The Oxford handbook of lifelong learning*: Oxford University Press, USA.

- Marshall, I. A., & Jackman, G.-A. (2015). Parental Involvement, Student Active Engagement and the 'Secondary Slump' Phenomenon—Evidence from a Three-Year Study in a Barbadian Secondary School. *International Education Studies*, 8(7), p84.
- Mazza, J. A. (2013). The use of social media tools by school principals to communicate between home and school.
- McDermott, P., & Rothenberg, J. (2004). Why Urban Parents Resist Involvement in Their Children's Elementary Education. *Approaches to qualitative research: A reader on theory and practice*, 286-301.
- Merkley, D., Schmidt, D., Dirksen, C., & Fuhler, C. (2006). Enhancing parent-teacher communication using technology: a reading improvement clinic example with beginning teachers. *Contemporary Issues in Technology and Teacher Education*, 6(1), 11-42.
- Moore, K. L. (2015). Identifying Effective Communication Practices for Eliciting Parental Involvement at Two K-8 Schools.
- Ocfcom. (2015). Facts and Figures. <http://media.ofcom.org.uk/facts/> Retrieved from <http://media.ofcom.org.uk/facts/>
- OECD. (2012). *Let's Read Them a Story! The Parent Factor in Education*. Retrieved from <http://dx.doi.org/10.1787/9789264176232-en>
- Ofcom. (2014a). *The Consumer Experience of 2013*. Retrieved from
- Ofcom. (2014b). *Cost and value of communications services in the UK*. Retrieved from
- Ofcom. (2015). *Adults' media use and attitudes Report 2015*. Retrieved from
- Olmstead, C. (2013). Using technology to increase parent involvement in schools. *TechTrends*, 57(6), 28-37.
- Passey, D. (2011). Technologies involving parents and guardians with their children's learning.
- Peters, M. (2008). Parental involvement in children's education.
- Riddlesden, D., & Singleton, A. D. (2014). Broadband speed equity: A new digital divide? *Applied Geography*, 52, 25-33.
- Rogers, E. M. (2003). Elements of diffusion. *Diffusion of innovations*, 5, 1-38.
- Rogers, R., & Wright, V. (2008). Assessing technology's role in communication between parents and middle schools. *Electronic Journal for the Integration of Technology in Education*, 7, 36-58.
- Sager, I. (2012). Before iPhone and Android Came Simon, the First Smartphone. <http://www.bloomberg.com/bw/articles/2012-06-29/before-iphone-and-android-came-simon-the-first-smartphone> Retrieved from <http://www.bloomberg.com/bw/articles/2012-06-29/before-iphone-and-android-came-simon-the-first-smartphone>
- Sandberg, J. F., & Hofferth, S. L. (2005). Changes in Children's Time with Parents: A Correction. *Demography*, 42(2), 391-395. Retrieved from <http://www.jstor.org/stable/4147352>
- See, B. H., & Gorard, S. (2014). *What do rigorous evaluations tell us about the most promising parental involvement interventions? A critical review of what works for disadvantaged children in different age groups*. Retrieved from
- Shute, V. J., Hansen, E. G., Underwood, J. S., & Razzouk, R. (2011). A review of the relationship between parental involvement and secondary school students' academic achievement. *Education Research International*, 2011.
- Simon, B. S. (2004). High school outreach and family involvement. *Social Psychology of Education*, 7(2), 185-209.
- Smith, J., Wohlstetter, P., Kuzin, C. A., & De Pedro, K. (2011). Parent Involvement in Urban Charter Schools: New Strategies for Increasing Participation. *School Community Journal*, 21(1), 71-94.
- Stevenson, O. (2011). From public policy to family practices: researching the everyday realities of families' technology use at home. *Journal of computer assisted learning*, 27(4), 336-346.
- Sylva, K., Melhuish, E. C., Sammons, P., Siraj, B. I., & Taggart, B. (2008). Final report from the primary phase: pre-school, school and family influences on children's development during Key Stage 2 (Age 7-11). 165. Retrieved from E-journal link(s): <http://elinks.dialog.com/servlet/LinkManager.StarLinksDirector?&year=2008&lm=false&rel=>

