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Exploring the use of texting to support family-school engagement in early childhood settings: teacher and family perspectives

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ABSTRACT

New technologies offer exciting opportunities for improving home-school communication, family engagement, and children's learning in early childhood. This paper presents the results of an exploratory study focused on understanding how texting might enhance family-school engagement in early childhood settings. Using focus groups and surveys of teachers ($n = 20$) and family members ($n = 30$) in an urban early childhood programme in the eastern United States, we examined the nature of current communication (including texting) between school and home, openness among teachers and families to the idea of sending or receiving home-school communication via text, and beliefs among teachers and families about how texting can support various aspects of family-school engagement. Results suggest that many teachers and families are enthusiastic about using texting and view texting as a tool to further family-school engagement and communication and to enhance child outcomes.

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Texting; technology; family-school engagement; family-school communication; parent involvement

Introduction

Educators, administrators, and researchers are working hard to build sustainable, effective, high-quality early childhood programmes that can be readily accessed by families with young children. A critical component of high-quality early education is supporting family engagement in programme activities and supporting family members in their efforts to continue children's learning at home. The centrality of family engagement in early childhood education is reflected in multiple efforts worldwide, including the United Kingdom (Sims-Schouten, 2016), Australia (Murray, McFarland-Piazza, & Harrison, 2015) and the United States (Office of Head Start, 2011), and in international organizations such as the OECD (OECD, 2006; Povey et al., 2016) and USAID (USAID, 2011).

Research has consistently shown that parental engagement boosts school outcomes across childhood (Jeynes, 2005; Lee & Bowen, 2006; Park & Holloway, 2017). Family involvement in young children's education is associated with positive development across a range of academic outcomes, including early literacy and language skills, social skills, motivation to learn, attention, task persistence, and positive behaviour (Arnold, Zeljo, Doctoroff, & Ortiz, 2008; Fantuzzo, McWayne, Perry, & Childs, 2004; Marcon, 1999; Sénéchal & LeFevre, 2002). Yet, many families remain less connected to what is happening in their children's classrooms and are thus unable to complement the learning that occurs at school with learning at home (Hindman, Miller, Froyen, & Skibbe, 2012). Similarly, many educators report the desire to increase the amount of family engagement that occurs in their schools, as they know that family engagement helps families, children, and classrooms succeed (Sanders,

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2009). In the next section, we describe the family-school engagement framework that guides this study.

Family-school engagement in early childhood settings

Defining FSE

Family-school engagement (FSE), or the ways in which families support their children's education, is a multidimensional construct that encompasses families' activities at home, at school, and in the community; school support for these efforts; and communication between families and schools (Epstein, 1995; Hoover-Dempsey et al., 2005; McWayne, Melzi, Schick, Kennedy, & Mundt, 2013). All of these components of FSE have been shown to play an important role in children's learning and growth from early childhood settings through high school (Hoover-Dempsey et al., 2005). Importantly, we focus on the construct of FSE because it is more comprehensive than the often-discussed parent involvement, as it affords a focus on multiple caregivers (e.g. parents as well as grandparents or family friends) and explicitly identifies both schools and families as active participants in this phenomenon.

Predictors of FSE

Researchers have identified a constellation of factors that promote or hinder FSE both independently and in concert (Hindman et al., 2015; Hoover-Dempsey et al., 2005). One factor includes families' personal motivation and cultural encouragement to be involved. For example, some caregivers may be reluctant to initiate school-family communication, instead deferring to educators as the engines of this interaction (McWayne et al., 2013). Second, the nature and frequency of invitations they receive from the school matters. Specifically, Hoover-Dempsey's work has clearly shown that both general and child- or family-specific invitations to be involved are critical planks in the bridge that connects the home and school. Indeed, Anderson and Minke (2007) found that parents of students attending urban elementary schools reported that direct invitations from teachers to attend school events and encouragement to engage in their students' learning process had the largest influence on parental involvement.

Third, caregivers' own perceptions of their skills and talents around FSE makes a difference, as their decisions to engage in FSE rest at least partly on their estimation of how likely their efforts are to result in desired gains for their child and family (Hoover-Dempsey et al., 2005). A parent with a high estimation of her own effectiveness in helping with her child's homework may be more likely to support this aspect of FSE than a parent with less confidence in this area (Hoover-Dempsey, 2011). Finally, the real-world contexts of families' everyday lives, including their reserves of time and energy, are linked to which and how many FSE activities they undertake (Fantuzzo et al., 2004; Waanders, Mendez, & Downer, 2007). For example, families headed by working parents can find it challenging to engage in multiple aspects of FSE, including casual communication with teachers at drop-off or pick-up, time-intensive home learning activities, and school-based FSE activities that occur during the work day. Another essential real-world resource is knowledge of the classroom language; families speaking a language other than English may find it challenging to engage in many forms of FSE (Bermúdez & Márquez, 1996; Bohon, Macpherson, & Atiles, 2005; Marschall, 2006).

Texting as a potential tool for family engagement

In the past, FSE in early childhood education settings has been supported through school meetings, home visits, in-school activities, and information being sent home on paper handouts (Henderson, Mapp, Johnson, & Davies, 2007). Despite these tools, however, FSE remains low in many communities, particularly among families in which mothers are less educated, families in immigrant communities, and working families facing logistical issues linked to employment and child care (Hindman et al., 2012). The rise of mobile technologies, however, presents novel opportunities for using technology

to support FSE and successful child development (Hall & Bierman, 2015). These new technologies include email, web-based programming, mobile apps, and texting.

Of these, texting is a particularly promising tool due to its wide adoption, even among communities in poverty; 99% of American adults aged 18–49 have a cell phone, with over 90% having a smart phone (Pew Research Center, 2018). Surveys suggest that the Millennial generation (a group well-represented as parents in early childhood programmes) prefer texting as a form of communication over phone calls and email (Newport, 2014). Also supporting logistical feasibility, texting between teachers and families specifically has become increasingly practical since the creation of services such as Remind, Class Dojo, and EdModo, which allow teachers to text families privately and securely without using their own personal mobile phone number. These services also allow text messages to be automatically translated for non-English speaking family members. Despite the promise of new forms of communication, little is known about the degree to which early childhood teachers are using, or are open to using, texting or other forms of technology to communicate with their families. Similarly, we know very little about families' interest in communicating with teachers with mobile devices or apps or whether families and teachers see them as a potential tool for enhancing young children's development.

Other human service programmes and health interventions have found texting to be a successful tool to enhance communication and improve client outcomes (Hall, Cole-Lewis, & Bernhardt, 2015) and, where families are concerned, offer effective nudges to engage in desired behaviours despite competing demands (Gennetian, Darling, & Aber, 2017; Jacob, Berger, Hart, & Loeb, 2016; Mayer, Kalil, Oreopoulos, & Gallegos, 2015). For example, the Text4Baby intervention, a prenatal health intervention, delivers text messages to pregnant women to support healthy outcomes for mother and child (Evans, Wallace, & Snider, 2012). Texting has also been shown to be helpful for increasing engagement in and completion of parent training programmes (Murray, Woodruff, Moon, & Finney, 2015).

Perhaps most encouraging are findings that texting parents information about child development has resulted in increased home involvement among parents of preschoolers (Doss, Fahle, Loeb, & York, 2018; Hurwitz, Lauricella, Hanson, Raden, & Wartella, 2015; York & Loeb, 2014). In an experiment, Hurwitz et al. (2015) sent text messages encouraging learning activities to parents over six weeks and found that parents who received text messages engaged in more learning activities, particularly fathers and parents of boys. As another example, the Ready4K! intervention (York & Loeb, 2014) sent three literacy texts per week for eight months to parents of preschoolers and found increases in home literacy activities as well as increased parental involvement at school. In addition, children in the texting programme experienced increases in reading comprehension and other literacy skills, with some effects being sustained through kindergarten (Doss et al., 2018). Mobile technologies have even been used to address other pressing education issues, including 'summer slide' in elementary school (Kraft & Monti-Nussbaum, 2017) and older students' school performance and absenteeism (Bergman & Chan, 2017).

The current study

As noted above, despite the promise of texting-based tools to enhance FSE, some questions about texting in early childhood contexts remain. First, it is unclear how receptive families might be to receiving text messages about their children from teachers. In fact, research (Larose, Bédard, Hammami, & Terrisse, 2008) has found that lower SES parents were less interested in receiving parenting information over the Internet than were higher SES parents. Similar findings have been found for health-focused interventions (Mackert, Kahlor, Tyler, & Gustafson, 2010; Walker, Im, & Vaughan, 2012). Thus, it would be important to understand families' perceptions on this front. Second, there is little information regarding how educators do or could use texting with families to support FSE. We address this gap in the literature by conducting a mixed-method study examining the potential of texting for supporting FSE in early childhood programmes. We gathered the perceptions of teachers and families from public prekindergarten and Head Start preschool programmes in a large

East Coast city regarding how effective and feasible texting could be as a potential tool for bridging the home-school gap. We focused on the following research questions:

(1) What is the nature of current, business-as-usual communication between schools and families, including but not limited to texting? We explored this question through surveys of both teachers and family members.
(2) To what degree are teachers and families open to the idea of sending or receiving communication via text or texting-based applications? and
(3) To what extent do teachers and families believe texting can support or 'nudge' aspects of family-school engagement, including home involvement activities and families' motivation to become involved? We examined these questions through qualitative analysis of focus groups and quantitative analysis of surveys of participating teachers and families.

Method

Background of study

This study draws from teachers and families participating in a larger project called Text to Talk, which uses a community-university partnership framework (Chevalier & Buckles, 2013; Hindman et al., 2015) and iterative design approach (Diamond & Powell, 2011) to develop a FSE intervention focusing on children's early language and literacy school readiness. The community-university partnership framework stresses the importance of community participation in the research project to provide essential input into the earliest stages of design and to provide initial testing of the intervention, so that the resulting intervention is feasible and effective in real-world classrooms serving children at risk (Hindman et al., 2015; Reason & Bradbury, 2001). Within this framework, teachers and parents provide situated, comprehensive, and insightful perspectives to inform the research project, which in the current study pertained to the potential use of texting, or texting-based applications to increase family-school engagement. The iterative design supports active learning from participants in the ongoing development of the intervention. The aim of the current study is to explore the landscape surrounding teachers' and families' experiences with using texting to support family-school engagement in early childhood settings.

The study population is generally representative of the broader community of preschool programmes serving low-income families in this city. According to 2014 data, the city is listed in the top ten of the poorest cities in the US. Approximately 85% of all city school district children below the age of 6 are eligible for free/reduced lunch. School district data reveal that, among children in preschool, 43% were African-American, 23% were White, 21% were Hispanic, 7% were Asian, and 6% were of multiple races.

Procedures

Four focus groups (two teacher focus groups and two family focus groups) were convened over the 2015–2016 school year to gather information about teachers' and families' views of family-school engagement, including communication using new technologies. During the focus groups, participants provided information, either via survey and/or in focus group discussion, about the three research questions listed above. The questions and topics discussed during the focus groups are listed in the Appendix.

Twenty teachers in total participated in the two teacher focus groups. Teachers were recruited by emails sent out by the school district. Two focus groups were held, one at a university and one at a large public pre-K centre. Family members were recruited from programmes taught by teachers involved in the Text to Talk study. Teachers invited family members to attend a focus group at their child's school. Teachers shared a flyer with families several weeks in advance, inviting them

to participate. These family members could include mothers, fathers, guardians, grandparents, or other family members who played a significant role in the child's education. All teachers and family members in the focus groups took a brief survey (described below) to collect demographic and current family-school communication practice information.

The first author conducted all focus groups, with co-authors in attendance. The authors guided semi-structured conversations with the entire focus groups, using a set of prompting questions designed to elicit questions related to communication practices, texting and family-school engagement, focusing on home activities, school supports for FSE, and communication perceptions on both sides. Family-school engagement (FSE) frameworks guided question development; questions focused most specifically on understanding teachers' and families' openness to communication via text and the extent to which they thought texting-based communication might support or nudge aspects of FSE, including home involvement activities and families' motivation to be involved (Epstein, 1995; Hoover-Dempsey et al., 2005; McWayne et al., 2013). The focus group conversations were 'semi-structured' in that specific topics were covered at all focus groups, but additional topics, when relevant, were explored and discussed as they emerged organically from the conversation. All focus group discussions were taped and transcribed and then coded to address the study's three research questions. The recordings were examined to ensure that all intended questions were asked in each focus group.

In addition, each focus group member also completed a survey to ensure that demographic information was collected systematically, and to better elucidate details about individual families' experiences.

Participants

Teacher focus groups

Twenty teachers in total participated in the two teacher focus groups; 10 (50%) were African-American, 3 were Hispanic-American, and 7 were white. See Table 1 for characteristics of the focus group participants.

Table 1. Characteristics of study members.

	n	%
Family race or ethnicity (n = 30 family members)		
African American	21	70
Hispanic	6	20
Other	3	10
Family languages		
English	22	73
English and Spanish	5	17
English and other language	1	3
Spanish only	1	3
Other language only	1	3
Type of family member		
Mother	18	60
Father	4	13
Grandmother	7	23
Cousin	1	3
Teacher race or ethnicity (n = 20 teachers)		
African American	13	65
White	6	30
Other	1	5
Teacher report: Forms of communication used monthly or more		
Paper handouts	20	100
Phone	20	100
Texting	9	45
Email	2	10
Facebook	1	5
Remind, Class Dojo, or other app	2	10

Family focus groups

Thirty family members in total participated in two focus groups. Because the focus groups occurred in the morning, many attendees were the family members responsible for taking the child to school and communicating with the teacher in the morning, and included other types of family members in addition to mothers or fathers. Although the majority of participants were parents, either mothers (63%) or fathers (13%), grandmothers (23%) were also well-represented.

Seventy percent of family members were African American, 20% were Hispanic, and 10% were other ethnicities; thus, relative to data in the broader city, this sample included more African American families and fewer White families. Seventy-seven percent of family members spoke English only, while 17% spoke English and Spanish. Two parents (6%) did not speak any English at all and participated through translators.

Measures

Surveys about methods of home-school communication (paper, phone, text, email, web app, or others) were given to teachers and family members in the focus groups. The teacher survey included questions about basic demographic information and the frequency with which they communicated with families via paper, email, phone, texting, Facebook, Remind, Class Dojo, other sources, and/or in person. The family survey asked respondents to report their relation to the child in school, the frequency with which they received communications from, or engaged in communication with teachers via paper, email, phone, texting, Facebook, Remind, Class Dojo, other sources, and/or in person, their preferences to ways of communicating, and their concern about the cost of receiving texts from a teacher.

Qualitative coding and analysis

The initial codes in this study were derived by the first author from the research questions and the Hoover-Dempsey et al. (2005) model of family involvement. These were used to generate an initial coding manual. The first author and a research assistant then coded the four transcripts (two family focus groups and two teacher focus groups). The codebook was further modified as new themes or topics emerged; these were added to the coding manual by group consensus among the coders (Strauss & Corbin, 1998). The two researchers then recoded the transcripts using the final coding manual. Segments of interview text were coded, enabling an analysis of segments sharing a particular theme, the documentation of relationships between themes, and the identification of themes important to participants. We aimed for the qualitative data to provide a rich picture of teacher and family experiences. In order to give a sense of the broader context for these remarks during the discussion of various themes, we report the total number of segments of interview text that were coded, by theme. All discrepancies were discussed by the two coders until agreement reached 100%.

Texting to support forms of FSE

Our first set of codes were for statements that concerned a potential role for texting, or use of texting-based applications such as Remind, in facilitating various types of family engagement, including family-school communication, involvement activities at home, involvement activities at school, and family members' values, goals, expectations, and aspirations regarding their child's education.

Texting to support home involvement

Our next set of codes included codes for statements that noted how texting or texting-based applications between family and school might support home involvement, including parents' or other family members' encouragement of their children, modelling of learning, reinforcement of what was learned at school, and instruction of learning topics.

Texting to support factors that support FSE

We created codes for comments that pertained to family factors that have been shown to influence family involvement and engagement, including aspects related to family member motivation to be involved, perceptions of invitations to be involved, and life context variables that influence involvement, including knowledge and skills, time and energy, and family culture. We looked to see if focus group discussions included comments on whether texting (or use of texting-based applications such as Remind) supported or interacted with any of these factors, such as whether texts could encourage higher levels of family motivation, whether texts were seen by families as invitations to be involved, whether texts were able to add to or complement families' knowledge and skill, whether texting was more or less mindful of family members' time, financial resources, and energy, and whether texting was a good fit with family culture.

Results

We organize our results by the following three research questions.

Research question 1: nature of current school-home communication

In the teacher survey, teachers reported using a diverse array of communication modes with families (Table 1). The methods that were endorsed by the largest number of teachers were sending home paper handouts and calling families; all teachers reported sending home paper handouts on at least a weekly basis and calling families on an as-needed basis. The next most commonly endorsed form of communication was texting (45%), on at least a monthly basis, either using their personal phone number or, for two teachers, also using an application such as Remind or Class Dojo. Teachers used email much less frequently, with only 10% emailing families each month, stating in the focus group that they thought most of their families did not have email addresses or email access. Finally, one teacher reported using a class Facebook page to communicate, primarily to inform families of upcoming events.

Family members generally echoed this pattern. In the family survey, they reported (Table 2) receiving paper handouts from their child's teacher/class at least once a week, with most receiving papers handouts several times a week or more (77%). Interestingly, though, 93% of family members also reported using one or more forms of modern technology to communicate with any of their children's teachers, including texting (83%), Class Dojo (7%), Facebook (37%), and email (27%). Only 2 (7%) reported never using any technology to communicate with teachers.

Research question 2: texting as a tool of home-school communication

As reported above, 45% of teachers used texting via their own phones or a service. During focus groups, teachers identified logistical issues as the most common content of these texts, such as asking after an absent or tardy child (9 comments). Some teachers (3 comments) also used texts to send home comments or pictures about the child that day. For example, Ms. C. said, 'If I send a picture, they were really excited. [The picture] makes the parents feel good.' Two teachers explicitly noted that they shared only positive comments or updates by text; instead they reported only using the phone or in-person meetings to discuss behavioural issues.

Likewise, in the family survey, families overwhelmingly (83%) supported the use of texting as a preferred form of communication. In the focus group discussions, families (31 comments) and teachers (18 comments) provided examples of how texting or texting-based apps had been used in family-school communication in their own experiences, including communication about logistics (e.g. school closures, needing to send in extra clothes), encouragement regarding a child's new achievement, and information about what was being learned in class that week.

Yet, when discussed during the focus groups, for a few parents and grandparents, comfort with technology was an obstacle towards being fully comfortable with texting or other technological

Table 2. Family survey responses: forms of communication used by families.

	n	%
Frequency with which papers are sent home		
Papers brought home most or every day	23	77
Papers sent home once a week	7	23
*Family members' use of forms of new technology to communicate**		
Texting	25	83
Remind	6	20
Class Dojo	2	7
Facebook	11	37
Email	8	27
None	2	7
*Family communication preferences**		
No preference	4	13
Texting	25	83
Email	14	47
Paper	9	30
Family has a concern about cost of texting	1	3

*Respondents could choose multiple options; responses do not add up to 100%.

forms of communication (3 comments). These family members had concerns with being able to see texts and less of a comfort with using texting in general, compared to younger family members. These family members did recognize that texting or a service such as Remind was useful for those who liked to use texting, but felt that 'it just wasn't for them.' One grandmother said, 'Texting is great for my daughter, because she is always at work during the day. So she appreciates getting the texts even if they aren't as good for me.'

Three caregivers, while positive about the benefits of texting, saw this strategy as a supplement to in-person communication, not as a replacement, particularly when discussing more personal or complex issues. One father said, '[Talking in person] is helpful to be able to see eye to eye,' noting that he came away from in-person conversations with a teacher when dropping off his son with a more thorough and holistic sense of the teacher's perspective.

Family survey results found a surprising contrast to teachers' hesitancy with email; 47% of family members reported email as a preferred method as well. Finally, less than one-third (30%) of family members reported receiving paper handouts – the most common teacher practice – as a preferred method of communication, unless in conjunction with another, technologically mediated method. About 13% of family members reported that they did not have a preference among different modes of communication.

Among teachers who had been using texting over the last year, several mentioned during the focus groups how using texting built warm and engaged relationships with families. One teacher noted how a student's father had sent her a text saying, 'You are appreciated!' A different teacher noted how a preschool family had supported her during a recent health scare while she was in the hospital. Rather than being an anonymous, digital purveyor of communication on the classroom, texting for these teachers and parents helped grow bonds and support inside and outside of the classroom, for both families and educators.

Research question 3: family and teacher experiences with texting for FSE

During focus groups, teachers and families offered opinions and experiences regarding texting as a support for aspects of family-school engagement, including how texting supported home involvement activities and how texting influenced families' motivation to become involved.

Home involvement

As described above, we coded the family focus groups discussions for various types of home involvement activities. The most common type of involvement activity that was supported by texting was

instruction of learning topics (13 comments). Several caregivers described games or activities they had done at home with their child to teach them about a new word or concept that had been delivered via text from a teacher who was sending home learning activities to families over the Remind service. For example, one parent used the word 'height' to play a game, finding toys at different heights, while another looked for geometric 'solids' around the neighbourhood. One mother described using objects from a sewing kit to examine 3D shapes to reinforce the word 'prism.'

'Reinforcement of learning topics' was the next most discussed home involvement activity that caregivers described doing with their children (7 comments). We looked for examples of parents describing how they engaged in reviewing or reinforcing learning topics that their child had learned at school, having been made aware of what was learned via text message. Because the two teachers (of families in focus groups) were sending home ideas for reinforcing at home vocabulary words or topics that had just been learned at school, parents had many examples of how they could reinforce the words at home. One parent, who had received a text from the teacher about shapes being taught in class, including various 3-D shapes, explained that she worked 'reinforcing the [texted] words using different things around the house.' She would help her child identify, 'that's a prism, that's a rectangular solid.'

Family motivation

Family members provided numerous examples of how texting supported family motivation to be involved.

Perceived invitations. Both teachers (4 comments) and families (23) provided numerous examples of how texting from teacher to family can be interpreted as a welcome invitation to participate in engagement or involvement activities. As one parent said, 'in the text she sent the words: measure, fabric, equal, texture. When I saw that last night, I could talk with my daughter about it.'

Perceived self-efficacy. The texts supported parents' beliefs about what they are supposed to do in relation to their children's schooling and were excited to have specific things to do with their children that were likely to have a positive influence on their children's education (16 comments). One parent's comment was a fair exemplar: '[When I have the learning activities texted to me], I know I'm talking with my daughter about something important. It gives me a topic for something to talk about at night.'

Life context variables that support involvement. Family knowledge and skills (11 comments) was most commonly discussed as an issue around language. Individual family members, or participants who had family members, who could not read English described how they translated texts that arrived in English. Some asked other family members to translate for them, others used apps on their own phone to translate. Teachers sometimes would send messages in the family member's language, as Remind has a translating service. English-speaking parents also described how they occasionally found a word unfamiliar, but could easily look up the word on their phone.

Six teachers reported that although parents with limited English skills were less likely to answer a phone call, if texted, they could show the text to an English-speaking family member or friend for translation. One teacher noted that she knew that a child's father could not read or write English, other members in the household did, and thus she actually preferred texting over other forms of communicating (such as calling on the telephone), because she knew that the father could show the texts to family members for translation. This father attended the family focus group and (in his native Spanish) noted that he would often look up words using translation services, to understand the texts.

The other life context variable enhanced by texting was time; teachers and families reported that texting often represented a more efficient, swift, and practical way of enhancing engagement (9 comments). Texting supported engagement by being mindful of both family and teacher time in three ways.

First, parents noted that texts were less likely to get lost in the 'kid and stuff shuffle.' Parents reported coming home from work and realizing papers were left in Grandma's car, or lost in

transit. In contrast, a text could not get lost and could be returned to multiple times in the future, as needed. With multiple family members receiving the text, teachers could feel assured that multiple family members were 'on board' with their message and cognizant of what was occurring in the classroom.

Second, families also liked that multiple family members could get the same message over text, in contrast to paper that might only be read by one person. In many families, a child was dropped off by one family member, picked up by another, and perhaps even staying over at a third family member's home for the night. Texts could go to all of them, at the same time, easily and seamlessly.

Finally, families also liked that they could look at texts at any time of day, such as at work, after dinner, or in the car. One mother said, 'I work weird hours. Receiving texts from Remind is good because I can check it at any time.'

One issue that was examined with the family survey, as well as the family focus groups, was the issue of cost, and whether the cost of texts would be a problem. On the survey, only 1 family member out of 30 was 'somewhat worried' about the cost of texting, while the other 29 were not worried at all. During the focus groups, family members reported that most friends, families, and neighbours had mobile plans that included unlimited texting and would not be concerned about the cost.

Five teachers reported that they found it more efficient and effective to text families than call them on the phone, as working parents may be less likely to pick up at their places of employment, yet may have a chance to read a text and quickly respond. The two teachers who used an application, such as Remind, to text all families at the same time, thought it was more efficient to do this than copy and send home many pieces of paper.

Discussion

This study tapped the views of 30 parents and 20 preschool teachers working in one city's high-poverty Head Start and public preK classrooms. Results suggest that parents and family members are largely open to using texting to communicate and that texting can support multiple elements of family-school engagement, including learning activities at home. Results also suggest that participants viewed texting as conducive to supporting several elements that influence family-school engagement (FSE), including by increasing invitations from teachers to families to be involved while being responsive to families' knowledge, skills, time, and other resources. During focus groups, caregivers voiced a pronounced interest in knowing what their child is learning in school so as to be able to reinforce and extend it at home and were open to the idea of receiving weekly messages from their child's teacher about what is being learned in school or school activities, in addition to messages about logistics or school events. During focus groups, teachers were also open to the idea of using texting, and among those who used it, were able to provide examples of how texting was useful for supporting school-home communication, could provide families with ideas for learning activities at home, and improved families' perceptions of invitations to be involved, in particular. Teachers also commented on how texting could support and add to families' knowledge and skills around involvement, while being respectful of their time and energy.

Indeed, results of this study suggest that many Head Start and public preK teachers are already texting families, or using apps to communicate with families via text. They use texting not only because it is logistically easier to reach busy working caregivers, but also because the translation capabilities of many texting programmes improve communication with those who may have trouble understanding an English-language conversation over the phone. Teachers also use texting to share pictures of children with families, and other small joys or student successes over the day. Overall, teachers reported higher levels of family engagement as a result of using texting because it efficiently facilitated ongoing dialogue between families and, in some cases, nurtured a stronger affective relationship between educator and family.

The make-up of the family members at the focus groups illustrated the fact that family members engaged in the lives of Head Start and preK children include non-parental figures; other family

members are often involved in pick-up or drop-off and are involved in communicating with the teacher. This finding has important implications for texting-based family engagement programmes, illustrating that schools can share information with these multiple family members through widely distributed text messages, while more traditional methods (e.g,. one flyer is sent home in a backpack to a child whose day-to-day life may involve multiple adults and residences) have less reach. Hindman et al. (2012) found that few families in the NHES or FACES study communicated with their school multiple times per week. Due to its ease, accessibility, and low (or no) cost, texting has the potential to increase the rates of communication with multiple members of a child's family, not just the caregiver who picks the child up at school or empties a backpack. Our study also suggests that texting has the potential to enhance other aspects of family-school engagement, including family involvement activities at home. By sending messages to multiple family members with specific learning activities to try at home, questions to ask, links to learning websites, and videos of books read during school, texting can be a powerful tool for bridging the home-school gap for many caregivers in a child's life.

Finally, our findings suggest that texting supports multiple factors that influence FSE overall. Our findings show that texting increases perceptions of invitations to be involved; can be a good tool for families with different levels of knowledge and skills, including language differences; and is mindful of families' (and teachers') time and energy.

Limitations, implications, and directions for future research

This is a small-scale pilot study. It is possible that other families or teachers would be less open to the idea of texting or texting apps. In addition, this research examined attitudes and levels of openness to texting, rather than teacher, family, or child outcomes. Given the nature of the sample, the findings are encouraging about the possibility of making the home-school connection among lower SES families. Future research must include measurement of teacher implementation of texting, including the frequency and content of the messages they send, in addition to the measurement of family engagement with the texts, including how families respond to them and whether they perform suggested activities. Finally, research must also examine whether texting learning activities or suggestions for specific family learning activities results in improved family learning behaviours and child learning outcomes.

There are multiple aspects of family engagement, as well as factors that support increased family engagement, that might be supported by home-school texting communication. Research should examine whether texting can support measureable improvements in home-school communication, which is an important facet of family involvement. But texting could also support activities at home by texting suggestions for an activity, such as a book reading activity, an online or tablet-based early literacy learning game, or learning activities the family could engage with at home or out in the community. Texting could also be used to send reminders for opportunities that might occur at school, such as a special event in the classroom or a class field trip to a museum. As most theoretical frameworks of family engagement also consider families' values, goals, expectations, and aspirations, texting messages that support these could also potentially be helpful. These texts could include messages of encouragement for families' work as learning partners with the school or reminders of kindergarten readiness skills that are useful for their child.

Most family members are motivated to help their child succeed in school, and a text could remind them of this and encourage their self-efficacy as a caregiver of a young learner. Since family time and energy is an important factor that influences the degree to which family members are involved, short, informative texts that come directly to family member's phones can be better use of family members' or other caregivers' limited time. In this way, texting and texting-based apps can act as inexpensive 'nudges' to support more family engagement. Rather than spending time looking for information in children's backpacks, caregivers can receive messages directly from teachers via a text or texting-service such as Remind. Language barriers can be more readily bridged with texts, as recipients

can translate messages in English using services on their own phone, or teachers can use automatic translation services to translate before sending.

Finally, texting between schools and families could also support specific types of learning strategies used by families such as encouragement, modelling, reinforcement, and instruction. A text could be sent to a parent or family member, reminding them to encourage their child on a particular skill that child is working on, provide an example of how to model a new social-emotional behaviour, could include information to reinforce the learning occurring at school with learning that is occurring at home, or give caregivers concrete directions for how to instruct their child on a particular behaviour.

Texting appears to have the potential to be a powerful, low-cost, technological 'nudge' to support multiple facets of family-school engagement in high-need prekindergarten settings.

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Appendix

Focus group questions

Family Focus Group

1. Discussion about school-family communication
    a. How does your teacher communicate with you?
    b. Paper? Phone calls?
    c. What about texting or an app like Remind?
    d. What is the nature of the communication with home (Probes: is it reporting when something went wrong? Or is it telling details of a trip? Is it ever sharing information specific to your own child?)
2. Has your teacher ever communicated with you about specific units she is working on or books that they are reading in class?
3. What do you want to hear from teachers?
4. How would you feel about getting new words over texting rather than paper?
5. Would the cost of texting be a deterrent to you?
6. How frequently would it make sense to have teachers text parents? Does once a week sound appropriate?
7. What sort of learning activities do you like to do with your children?
8. How does communicating with teachers make you feel?

Teacher Focus Group

1. Discussion about school-family communication
    a. Do you communicate with families by sending home paper handouts or notices?
        i. Probe: How often?
        ii. Probe: What information do you send home via paper handout?
        iii. Probe: What is the nature of the communication? When something goes wrong? Details of a trip? Sharing specific info about child?
    b. Phone calls? (Same probes above)
    c. Texting
        i. Do you use apps like Remind or Class Dojo?
    d. Face-to-face? (Do you usually see a child's parent every day, or are they often dropped off/picked up by other caregivers?)
2. Do you think you could use an app to communicate about what you are doing at school, or what parents can do at home, with families?
    a. Discuss pros and cons
3. How frequently would it make sense to have teachers text families? Does once a week sound appropriate?