



Text2Learn: An Early Literacy Texting Intervention by Community Organizations

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Overview

Can the use of texting promote parents' engagement in early literacy activities with their preschool children? In 2012-2013, Minnesota Children's Museum (MCM) partnered with two local metropolitan county library systems to develop and implement Text2Learn, a mobile phone texting program for low income parents of preschoolers. The goal of Text2Learn was to promote preschool parents' knowledge of early literacy, encourage them to increase early literacy activities with their preschoolers, and use community resources that supported early literacy. Texts were delivered over a 12-week period of time and contained information about early childhood literacy, literacy-promoting activities, and opportunities to use early childhood community resources and programming. The Center for Early Education and Development (CEED) at the University of Minnesota conducted an evaluation of the program.

Evaluation results showed that the texts were well-received by this group of parents. Parents reported engaging in more literacy activities with their children after receiving the texts, and appreciated getting reminders about activities.

They did not report increased use of community resources, such as libraries, or changes in attitudes about literacy. Overall, this study suggests that texting is a strategy worth exploring because it can effectively provide parents with frequent reminders of ways they can support their children's early literacy development.

Key Findings

- Low-income parents from ethnically diverse backgrounds were willing to sign up to receive text messages.
- Parents found the text messages to be helpful reminders to engage in literacy activities with their children.
- Parents reported engaging in more literacy activities with their children after they had received the text messages.
- Text messages are an innovative way for community organizations to extend the reach of their information.

Introduction

Improving young children's pre-literacy skills through parenting programs continues to be an area ripe for intervention. Parents' own use of language and support of emerging pre-literacy skills is recognized as essential to children's literacy development (Burgess & Hecht, 2002). Cognitive abilities in early childhood, including literacy skills, lay the foundation for later achievement. Cognitive skills at school entry predict long-term academic performance and educational achievement (Gutman, Sameroff, & Cole, 2003; Duncan et al., 2007; LaParo & Pianta, 2000; Luster & McAdoo, 1996).



However, parental involvement in early literacy development is not always intuitive. Low income parents are less likely to engage in literacy-promoting activities, like talking and reading with their children. In fact, their involvement decreases as risk factors increase (e.g., single parenthood, low maternal education) (Burchinal, Roberts, Zeisel, Hennon, & Hooper, 2006). Limited parental involvement in early literacy development has serious implications, because parent-child involvement in literacy activities predicts the development of literacy and school readiness skills (Bennett, Weigel & Martin, 2002; Bracken & Fischel, 2008; Senechal & LeFevre, 2002). Limited parental involvement may help explain why low-income preschoolers lag behind higher-income peers on literacy and school readiness by the time they enter school (Hindman, Skibbe, Miller & Zimmerman, 2010; Isaacs, 2012). Supporting low-income parents in their efforts to provide a warm, responsive, and cognitively stimulating home may help to close the gap in early literacy

between lower and higher income students before formal schooling begins (National Early Literacy Panel, 2008). The current study explores a relatively new parenting intervention — the use of text messaging — to improve parents' stimulation and support of their young children's pre-literacy skills.

Libraries and museums are in a prime position to reach out to parents to facilitate early learning. They are recognized as community experts in the development of young children (IMLS, 2013). Ninety-four percent of parents view libraries as “very important” for their children, with the most cited reason being that they promote literacy and a love of reading. These institutions are especially valued by lower income families, who are more likely than other parents to say that library services are “very important” (Miller, Zickuhr, Rainie, & Purcell, 2013). Children's museums promote a playful learning pedagogy that underscores play as a primary means of learning and defines a role for parents that intentionally scaffolds children's learning. Partnerships between libraries and museums that create and deliver literacy interventions may be a useful strategy. Such partnerships align with institutional goals of promoting early learning, and leverages parents' willingness to embrace library/museum services for their children.

Sending text messages to parents is becoming a popular strategy for building knowledge and encouraging positive behavior. Text messaging is widely available, inexpensive, and instant. In the United States, 90% of adults have a cell phone, and 81% report using it to send or receive text messages. In addition, 84% of families with incomes less than \$30,000 per year use cell phones (Pew Research, 2014). Text messages may be an especially good way to reach at-risk families. Text messaging programs have successfully promoted parenting behavior change in a number of important domains: decreasing the likelihood of abuse and neglect, increasing childhood vaccinations, and encouraging healthy pregnancies (Bigelow, Carta, & Burke Lefever, 2008; Gazmararian et al., 2014; Kharbanda, Stockwell, Fox & Rickert, 2009; Self-Brown & Whitaker, 2008). Text messaging interventions have been well received, even by diverse and low income populations, and parents think they are more effective than phone or mail messages (Kharbanda et al., 2009). Text messages remove some barriers of unpredictable schedules and high mobility that can cause problems for in-person interventions. Interventions that can keep families interested and engaged are more likely to elicit positive outcomes (Gomby, 2005). Thus, text messages show promise as an intervention strategy for promoting behavioral change.

Significance of this Study

This brief describes the results of a texting intervention to promote literacy, which was a cooperative effort of Minnesota Children's Museum, the Hennepin County and Saint Paul Public Libraries, Way to Grow, the St. Paul Promise Neighborhood, Think Small, and the Center for Early Education and Development at the University of Minnesota. The purpose of the study was to evaluate the effectiveness of the text messages at increasing the level of early literacy activities low-income parents engaged in with their children.

This study was also significant in that it was a partnership of many organizations in the Minneapolis-Saint Paul community. It is one example of how such organizations can work together to both do research and further organizations' goals simultaneously.

"A nice reminder to stay engaged with kids day-to-day." –Parent

Partnering Organization Roles

MCM, program partners and the CEED evaluation team worked together to design and implement the Text2Learn evaluation. First, they held a series of collaborative discussions to formulate a logic model that guided program priorities, specified intended mechanisms of change, and develop evaluation questions. Second, they developed an evaluation design considering the need to: 1) maximize parental participation in the evaluation since these were families generally unfamiliar with evaluation studies, and 2) implement the most rigorous design possible, which can be challenging in community-based evaluation. Community-based partners decided to recruit families via community events using traditional project descriptions and consent forms. They provided families with the initial survey. Follow-up surveys were also sent to the families.

Methodology

Evaluation questions

As a result of the collaborative partner discussions, MCM and program partners decided they were interested in knowing if receipt of the texts changed parental knowledge and behaviors related to literacy, and how parents perceived this new program.

"Getting friendly reminders to actually do tasks." –Parent

The following evaluation questions were posed:

1. Does the texting intervention increase parent knowledge, awareness and behaviors related to promoting literacy skills in their preschoolers?
2. What were parents' perceptions about Text2Learn?

Study Design

A wait-list control design was chosen. This rigorous design maximized parents' participation and allowed for random assignment. Parents were randomly assigned to receive the texts in a first or second group and completed the surveys prior to and after the first group received the texts. Then the second group received the texts, and completed a survey after receiving them. This way, all eligible and interested parents were able to participate in the Text2Learn program and in the evaluation, maximizing the size of the sample and enabling the research team to make causal conclusions about the impact of the program. By combining the results from both the first and second group after they had received the texts (red Xs) and comparing them to the pre-survey for both groups (blue Xs), we were able to test if receiving the text messages was associated with an increase in reported literacy activities on the surveys.

The following table describes the design:

Table 1 Evaluation Design

	Pre-survey	1st Round Texts	Post-survey	2nd Round Texts	Post-post survey
Group 1	X	O	X		
Group 2	X		X	O	X

X = survey given, O = texts received. Blue = pre-survey, Red = post-survey.

MCM worked with the community-based programs Way to Grow, Think Small, and the Saint Paul Promise Neighborhood, who serve low income families with preschool-age children, to obtain lists to send recruitment and pre-survey materials (including a consent form approved by the U of MN IRB). A total of 110 parents from the two community-based programs signed up to participate in Text2Learn and the evaluation. Parents were then randomly assigned by MCM staff to receive the texts in group 1 (N=50) or group 2 (N=60). Of the hundred and ten parents who signed up, 85% were mothers and 10% were fathers (5% did not respond to the question). They ranged in age from 19-50. Parents mainly spoke English at home (72%) with Hmong (13%) and English Bilingual (5%) being the next highest choices. Participants came from a range of racial and ethnic backgrounds (45% Black/African American, 20% Asian, 14% White, 10% Multiracial, 5% Hispanic, and 5% American Indian). They also ranged in years of education completed (10% Some High School, 23% High School Diploma, 31% Some College, 14% 2-year College, 22% 4-year College or higher).

"Some days I'm so busy that getting a text to remind me to hug my child today means so much to me and especially to them." —Parent

We successfully implemented this design, but had a low response rate from parents for the post-survey (53% for group 1, 46% for group 2). Some surveys could not be used because they could not be linked to original phone numbers, parents had difficulty receiving texts, or parent answers were unclear. Fortunately, with the wait list control design, we could include all parents who received the texts, maximizing our sample size. The final analyses were conducted on 72 pre/post pairs of data.

Text2Learn Program

Parents received 2-3 texts per week for approximately 12 weeks. The texts included information about literacy and literacy activities happening in the community.

The tone and approach of the messages were focused on playful activities that can be easily incorporated into every day routines. Some text messages suggested specific literacy activities:

- Is your child a fire fighter today? Or maybe a chef? GREAT! During pretend play your child is likely talking more, trying new words & using longer sentences.
- Your child's name is special! Talk together about the letters in their name. What other words do you say that make the same sound as the first letter?
- Scribbling matters! Your child's masterpieces are important first steps in learning to read & write! Give them crayons & paper to scribble away!
- Earn prizes for reading! The Saint Paul Public Library's Summer Reading Program is for kids ages 0-18. Visit sppl.org or call 651-266-7000 for more information.

Other text messages gave more general information about child development:

- Literacy begins at birth and continues throughout life! Your preschooler is at the prime of language and literacy development and YOU make a huge difference!
- Has your child asked what a word means yet? If so, that is a sign of progress in their literacy development! If they haven't, they will! Just keep playing!
- You are your child's most important teacher! Talking, singing, playing, even smiling is improving your child's communication abilities.

The Survey

A parent survey (pre and post-versions) was developed for Text2Learn. The survey, which reflected the content from the texts themselves, was based upon the libraries' conceptualization of literacy activities as talk, read, write, play and sing; review of other surveys of parental literacy activities; and specific questions of interest to the program implementers. The survey tool included 21 items covering the 5 areas of literacy activities. Parents rated each item on a scale of 0-5 (rarely or never/few times per month/few times per week/most days/once a day/more than once per day).

Examples include:

- I describe objects, places and other things my child sees.
- My child and I listen to children's songs together.

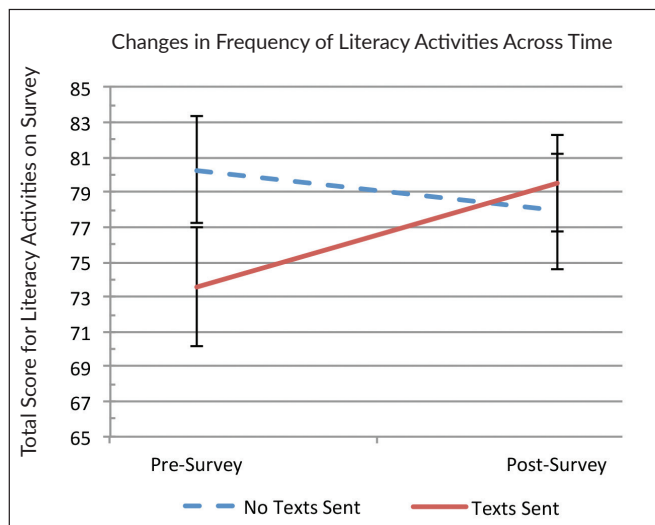
- I allow my child to interrupt me and ask questions while I'm reading to him/her.
- My child spends time scribbling or drawing.
- I supply my child with household items to make his/her pretend play "more real" (spoons, cereal boxes, towels, Band-Aids).

Parents were also asked a few open-ended questions about literacy activities, and asked to rate the importance of talking, reading, writing, playing, and singing to literacy development. The post-survey included the same items as the pre-survey, and also asked questions about parents' perceptions of the text messages themselves.

Summary of Results

The first question addressed in the analyses was: Did the texting intervention increase parent knowledge, awareness and behaviors related to promoting literacy skills in their preschoolers?

To answer this question, we first examined the responses to the questions about the frequency of literacy activities. We found that the reported frequency of literacy activities significantly increased from pre- to post-survey when the texts were sent between the surveys. In contrast, when we compared this to periods in which no texts were sent, parents did not significantly change in their reported frequencies (they decreased slightly).



Parents did not significantly increase their library attendance over time. Parents' average response was that they took their child to the library "every month" and this did not differ before and after they had received the text messages. Furthermore, parents' attitudes about the importance of the five areas of early literacy did not change over time. From the outset, parents had scores that suggested that they did value the five areas of early literacy, so change in this arena would be difficult to achieve. It is possible that they chose to participate in this project because they already held positive views of literacy.

"It was convenient and I shared what I read with friends. The info was a great reminder about the things we do that make such a big impact on our children's learning." –Parent

Parents varied in their responses of if they attended the community events mentioned in the text messages (49% None, 33% 1-2 Events, 19% More than 2 Events).

The second question addressed was: What were parents' perceptions about Text2Learn?

Of the 51 parents who responded to that question, the majority (80%) of parents felt there that the number of texts they received was "just right" (20% too few, 0% too many). Parents also reported that the text messages helped them do new or more literacy activities with their child, with 49% of the parents being able to describe one activity that they had done with their child because of a text they had received.

Parents also reported what was most and least helpful about the texts. They appreciated that they served as good reminder to engage in literacy activities with their children. For some, the texts reinforced good practices, while for others, they offered new ideas. Parents overwhelmingly liked the ideas for activities, and wanted even more ideas and more specific ideas (they found the general texts to be less helpful).

Conclusions and Implications

Text2Learn showed promise as a way to promote parent involvement in literacy activities. Parents appreciated the content of the messages and wanted even more information! Text messages are a feasible and appealing intervention strategy that can be used to provide frequent suggestions and reminders that promote parent involvement in literacy activities.



Limitations of the study should be acknowledged. First, there were some barriers to parents receiving texts. Five parents noted in their post surveys that they had never received any texts, and it is possible that this was also a problem for parents who did not return a post-survey. Future interventions may want to check early on if parents are receiving the text messages, and/or offer the intervention in multiple formats (e.g. email), so that parents who have difficulty receiving texts can still participate.

It may also be useful to give parents a paper copy of all the messages at the end of the intervention, so they can go back and review the information.

There was also significant attrition between recruitment and return of post surveys, which may affect the generalizability of these results. Similar studies have had similar problems: in a recent text messaging intervention study, final results included 65% of parents, even though 80% of parents had unlimited texting plans (York & Loeb, 2014). In the future, it may be beneficial to explore alternate strategies to facilitate evaluation (e.g. following up with phone calls, asking community partners to check in). Rather than mailing surveys, it may be useful to text an online link to parents to complete the survey. When working with diverse low-income families, it may also be helpful to have options of the languages in which the text messages and surveys are received, so that the intervention can be inclusive of all who want to participate.

These results suggest that continued exploration of how a texting program for parents can be incorporated into the work of museums and libraries would be useful. For example, use of mobile technology could become part of regular museum membership benefits, or of regular library services for parents who sign up to receive texts. This mode of getting information about early literacy activities to parents shows promise, and has great potential for scaling up. In future interventions, it is important to continue monitoring whether parents are receiving the messages and gather feedback about parental satisfaction and topics of interest.

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