
Children’s text-messaging: Abbreviations, input methods, and links with literacy

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Abstract

This study investigated the effects of mobile phone text-messaging method (predictive and multi-press) and experience (in texters and non-texters) on children’s textism use and understanding. It also examined popular claims that the use of text-message abbreviations, or textese spelling, is associated with poor literacy skills. A sample of 86 children aged 10 to 12 years read and wrote text messages in conventional English and in textese, and completed tests of spelling, reading, and non-word reading. Children took significantly longer, and made more errors, when reading messages written in textese than in conventional English. Further, they were no faster at writing messages in textese than in conventional English, regardless of texting method or experience. Predictive texters were faster at reading and writing messages than multi-press texters, and texting experience increased writing, but not reading, speed. General spelling and reading scores did not differ significantly with usual texting method. However, better literacy skills were associated with greater textese reading speed and accuracy. These findings add to the growing evidence for a positive relationship between texting proficiency and traditional literacy skills.
The advent of mobile phones, and of text-messaging in particular, has changed the way that people communicate, and adolescents and children seem especially drawn to such technology. Australian surveys have revealed that 19% of 8- to 11-year-olds and 76% of 12- to 14-year-olds have their own mobile phone (Cupitt, 2008), and that 69% of mobile phone users aged 14 years and over use text-messaging (Australian Government, 2008), with 90% of children in Grades 7-12 sending a reported average of 11 texts per week (ABS, 2008).

Text-messaging has also been the catalyst for a new writing style: textese. Described as a hybrid of spoken and written English (Plester & Wood, 2009), textese is a largely sound-based, or phonological, form of spelling that can reduce the time and cost of texting (Leung, 2007). Common abbreviations, or textisms, include letter and number homophones (c for see, 2 for to), contractions (txt for text), and non-conventional spellings (skool for school) (Plester, Wood, & Joshi, 2009; Thurlow, 2003). Estimates of the proportion of textisms that children use in their messages range from 21-47% (increasing with age) in naturalistic messages (Wood, Plester, & Bowyer, 2009), to 34% for messages elicited by a given scenario (Plester et al., 2009), to 50-58% for written messages that children ‘translated’ to and from textese (Plester, Wood, & Bell, 2008). One aim of the current study was to examine the efficiency of using textese for both the message writer and the reader, in order to understand the reasons behind (Australian) children’s use of textisms.

The spread of textese has been attributed to texters’ desire to overcome the confines of the alphanumeric mobile phone keypad (Crystal, 2008). Since several letters are assigned to each number, the multi-press style of texting requires the somewhat laborious pressing of the same button one to four times to type each letter (Taylor & Vincent, 2005). The use of textese thus has obvious savings for multi-press texters, of both time and screen-space (as message character count cannot exceed 160). However, there is evidence, discussed below, that reading textese can be relatively slow and difficult for the message recipient, compared to
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reading conventional English. Since the use of textese is now widespread, it is important to examine the potential advantages and disadvantages that this form of writing may have for message senders and recipients, especially children, whose knowledge of conventional English spelling is still developing.

To test the potential advantages of using textese for multi-press texters, Neville (2003) examined the speed and accuracy of textese versus conventional English in writing and reading text messages. British girls aged 11-16 years were dictated two short passages to type into a mobile phone: one using conventional English spelling, and the other “as if writing to a friend”. They also read two messages aloud from the mobile phone, one in conventional English, and the other in textese. The proportion of textisms produced is not reported, but no differences in textese use were observed between texters and non-texters. Writing time was significantly faster for textese than conventional English messages, with greater use of textisms significantly correlated with faster message typing times. However, participants were significantly faster at reading messages written in conventional English than in textese, regardless of their usual texting frequency.

Kemp (2010) largely followed Neville’s (2003) design, but with 61 Australian undergraduates (mean age 22 years), all regular texters. These adults, too, were significantly faster at writing, but slower at reading, messages written in textese than in conventional English, regardless of their usual messaging frequency. Further, adults also made significantly more reading errors for messages written in textese than conventional English.

These findings converge on the important conclusion that while the use of textisms makes writing more efficient for the message sender, it costs the receiver more time to read it. However, both Neville (2003) and Kemp (2010) examined only multi-press method texting, and not the predictive texting method now also available. Predictive texting requires only a single key-press per letter, and a dictionary-based system suggests one or more likely words
based on the combinations entered (Taylor & Vincent, 2005). Textese may be used less by predictive texters than multi-press texters for two reasons. Firstly, predictive texting requires fewer key-presses than multi-press texting, which reduces the need to save time by taking linguistic short-cuts. Secondly, the dictionary-based predictive system makes it more difficult to type textisms that are not pre-programmed into the dictionary.

Predictive texting is becoming increasingly popular, with recent studies reporting that 88% of Australian adults (Kemp, in press), 79% of Australian 13- to 15-year-olds (De Jonge & Kemp, in press) and 55% of British 10- to 12-year-olds (Plester et al., 2009) now use this method. Another aim of this study was thus to compare the reading and writing of textese and conventional English messages in children using their typical input method: predictive or multi-press texting, as well as in children who do not normally text.

Finally, this study sought to investigate the popular assumption that exposure to unconventional word spellings might compromise children’s conventional literacy skills (e.g., Huang, 2008; Sutherland, 2002), with media articles revealing widespread disapproval of this communication style (Thurlow, 2006). In contrast, some authors have suggested that the use of textisms might actually improve children’s literacy skills (e.g., Crystal, 2008). Many textisms commonly used by children rely on the ability to distinguish, blend, and/or delete letter sounds (Plester et al., 2008, 2009). Practice at reading and creating textisms may therefore lead to improved phonological awareness (Crystal, 2008), which consistently predicts both reading and spelling prowess (e.g., Bradley & Bryant, 1983; Lundberg, Frost, & Petersen, 1988). Alternatively, children who use more textisms may do so because they have better phonological awareness, or poorer spellers may be drawn to using textisms to mask weak spelling ability (e.g., Sutherland, 2002). Thus, studying children’s textism use can provide further information on the links between the component skills that constitute both conventional and alternative, including textism-based, literacy.
There is evidence for a positive link between the use of textisms and literacy skills in pre-teen children. Plester et al. (2008) asked 10- to 12-year-old British children to translate messages from standard English to textese, and vice versa, with pen and paper. They found a significant positive correlation between textese use and verbal reasoning scores (Study 1) and spelling scores (Study 2). Plester et al. (2009) elicited text messages from a similar group of children by asking them to write messages in response to a given scenario. Again, textism use was significantly positively associated with word reading ability and phonological awareness scores (although not with spelling scores). Neville (2003) found that the number of textisms written, and the number read accurately, as well as the speed with which both conventional and textese messages were read and written, all correlated significantly with general spelling skill in 11- to 16-year-old girls.

The cross-sectional nature of these studies, and of the current study, means that causal relationships cannot be firmly established. However, Wood et al. (2009) report on a longitudinal study in which 8- to 12-year-old children’s use of textese at the beginning of the school year predicted their skills in reading ability and phonological awareness at the end of the year, even after controlling for verbal IQ. These results provide the first support for the idea that textism use is driving the development of literacy skills, and thus that this use of technology can improve learning in the area of language and literacy. Taken together, these findings also provide important evidence against popular media claims that the use of textese is harming children’s traditional literacy skills.

No similar research has yet been published with children outside the UK. The aim of the current study was thus to examine the speed and proficiency of textese use in Australian 10- to 12-year-olds and, for the first time, to compare the results of children who normally use predictive texting, multi-press texting, or who do not normally text at all. Based on previous studies, it was hypothesised that messages would be overall faster to compose but slower and
less accurate to read when written in textese than in conventional English. Since multi-press texting requires more key-presses than predictive texting, it was hypothesised that multi-press texters would be significantly slower than predictive texters at writing both message types. It was expected that multi-press texters would use significantly more textisms than predictive texters, and that this experience would mean that they were faster and more accurate at reading than predictive texters on textese messages, compared with conventional messages. Because of their lack of practice, non-texters (using multi-press entry) were expected to be slower at reading and typing both message types than their peers. However, based on findings by Neville (2003) and Plester et al. (2008), it was hypothesised that non-texters would not differ significantly from multi-press texters on the reading accuracy or writing use of textisms.

The second major aim of this study was to compare predictive, multi-press, and non-texters on standardised literacy measures, and to examine the relationship between these measures and performance on the text-messaging tasks. As discussed, it is assumed that multi-press texters use textisms more than predictive texters, and it has been shown that textism use is associated with higher literacy skills (e.g., Plester et al., 2008). However, since non-texters seem to be just as good as multi-press texters at reading and writing textisms (Neville, 2003; Plester et al., 2008) textism exposure alone may not explain literacy scores. Thus, we made no hypotheses about group differences on literacy skills. Finally, relationships between texting task performance and standardised literacy scores were expected to be largely positive, as has been found in previous studies with children, despite popular alarm.

**Method**

**Participants**

The participants were 86 children (26 boys, 60 girls), with a mean age of 11.5 years (range 10.4 to 12.4 years) in Grades 5 and 6, from three largely middle-class Australian schools. All participants were fluent English speakers and reported texting only in English.
Materials

Four text messages were created, each with a conventional English version (e.g., Someone left a message about your friend being sick) and a textese version (e.g., somel left a msg bout ur frend bein sik). The textese versions were created using the textisms most commonly produced by a larger sample of 227 children from the same classes, who were asked to write a textese version of each of 30 target words. Messages were matched for abbreviation types, and extra words were included to control message length and coherence. Textese messages consisted of 19-21 words (74-81 characters), and conventional messages of 19-21 words (101-109 characters); see appendix. Participants composed and read the messages on a Nokia model 6210 phone, the most common brand used by the initial larger sample, and which used the most popular method of predictive texting (end-of-word dictionary suggestion).

Spelling, real-word reading, and non-word reading were assessed, respectively, with the spelling subtest of the Wide Range Achievement Test (Wilkinson & Robertson, 2006), and the Word Identification and Word Attack subtests of the Woodcock Reading Mastery Tests-Revised (Woodcock, 2007).

Procedure

Participants were tested individually in a quiet school room. The experimenter administered the standardised literacy tasks and mobile phone tasks in counterbalanced order. In the mobile phone tasks, participants were given two messages to read, and two to write, in counterbalanced order (see appendix for messages). In the reading tasks, participants read aloud two messages (one conventional and one textese) from the mobile phone provided. Before completing the writing tasks, participants confirmed their texting status (texter or non-texter) and usual texting method (predictive or multi-press), which was then set on the phone. Non-texters used the multi-press method. Participants were familiarised with the function of the phone’s buttons. In the writing tasks, participants typed two dictated messages (one
conventional, one textese) into the phone. In the conventional condition, children were asked to type the message “making sure that all words [were] spelled correctly and with proper punctuation”. In the textese condition, children typed each word as they “would normally text a friend” (for non-texters: “would imagine texting…”). Children using predictive entry had to switch temporarily into multi-press to create textisms, as is usual unless particular textisms have been programmed into the phone (which they were not in this study). Reading and writing of these messages was timed.

Results

Participant characteristics

The 86 participants used their normal text entry method: 45 (52%) used predictive and 29 (34%) used multi-press, as did the 12 (14%) who did not usually text. Predictive texters reported texting for a mean of 22.6 months ($SD = 14.6$), and multi-press texters for 21.8 months ($SD = 15.7$). It is not clear that children could reliably estimate the average number of messages they sent and received per day: estimates ranged from <1 to 315, with a mean of about 50. Since these children were not usually allowed access to their phones for 6 school hours a day, and since they probably spent at least 10 hours a day on sleep and personal care, even sending 200 messages a day would mean sending an average of one message every 5 minutes every available waking hour, which seems excessive. If we consider only the approximately 80% of children who reported sending and receiving ≤100 messages per day, the daily mean is 24.0 ($SD 25.0$) for sending and 23.5 ($SD 23.4$) for receiving.

Mobile phone tasks

We first compared the predictive, multi-press, and non-texter groups’ performance on the four text messages in terms of writing time, proportion of textisms written, reading time, and proportion of reading errors made. As shown in Table 1, message writing times were remarkably similar across conventional and textese messages, although predictive texters
were twice as fast as multi-press texters, and more than twice as fast as non-texters. All groups mainly avoided using textisms in conventional messages, but used them when writing “as if to a friend” (textese messages), with the greatest proportion produced by the multi-press texters. When reading messages, all groups were much faster with conventional than textese messages. Multi-press texters were slower than their peers on both message types, and predictive texters were noticeably fast at reading textese messages. Participants made few reading errors overall, but these were more common in textese than conventional messages. These differences were examined in a series of 3 (group: predictive texter, multi-press texter, non-texter) x 2 (message type: conventional, textese) mixed factorial ANOVAs.

In terms of writing time, there was a significant main effect of group, $F(2, 82) = 50.46, MSE = 11.02, p < .001, partial \eta^2 = .47$. Tukey post-hoc tests confirmed that irrespective of message type, predictive texters were significantly faster at typing messages than both multi-press and non-texters, $p < .01$, presumably because predictive texting requires fewer key-presses than multi-press texting. However, multi-press texters were significantly faster than non-texters, $p < .01$, indicating that even when the same entry method is used, experience leads to faster typing. The lack of other effects suggests that using textisms did not make children any faster at composing messages, regardless of text entry method or experience.

In terms of proportion of textisms used, there was a significant main effect of group, $F(2, 82) = 4.67, MSE = 0.17, p = .012, partial \eta^2 = .10$, and of message type, $F(1, 82) = 164.32, MSE = 0.19, p < .001, partial \eta^2 = .66$. However, these effects were subsumed by a significant two-way interaction, $F(2, 82) = 7.03, MSE = 0.19, p = .002, partial \eta^2 = .15$. Tukey post-hoc tests confirmed that all three groups used a significantly higher proportion of textisms when writing textese than conventional messages. Very few textisms were used in conventional messages, but in the textese messages, multi-press texters used significantly more textisms than both predictive texters, $p < .01$, and non-texters, $p < .05$. 
The ANOVA for reading time revealed significant main effects of message type, $F (1, 81) = 78.08$, $MSE = 10.38$, $p < .001$, partial $\eta^2 = .49$ and group, $F (2, 81) = 6.98$, $MSE = 20.65$, $p = .002$, partial $\eta^2 = .15$, but these were subsumed by a significant group x message type interaction, $F (2, 81) = 6.02$, $MSE = 10.38$, $p = .003$, partial $\eta^2 = .13$. Tukey post-hoc tests confirmed that reading time was significantly slower for textese than for conventional messages across all three groups, $p < .01$. The multi-press texters were significantly slower than the predictive texters in reading both textese, $p < .01$, and conventional messages, $p < .05$, and significantly slower than non-texters in reading conventional messages, $p < .05$.

Despite the small number of reading errors made, this outcome measure was examined to test whether the use of textisms could hinder reading comprehension. This revealed a significant main effect of message type, $F(1, 82) = 68.47$, $MSE = 0.05$, $p < .001$, partial $\eta^2 = .46$, showing that overall, children made a significantly higher proportion of reading errors when reading messages written in textese than in conventional English. There was no significant main effect of group, and no significant interaction.

**Literacy skills**

Means and standard deviations for performance on spelling, and on real and non-word reading for the three texting groups are shown in Table 2. All groups performed within the average range on each test. Although non-texters scored slightly higher than their peers all three literacy measures, three one-way ANOVAs confirmed that group differences were not significant on any of these measures, $Fs < 2$.

To investigate the relationship between the mobile phone task measures and literacy skills, a series of Pearson’s product-moment correlations were conducted. We could not control for texting experience in terms of mean number of texts sent per day, because we were not certain that the children’s estimates were sufficiently reliable, nor for number of months’ texting experience, as this did not correlate significantly with any of the texting task measures.
Since age did correlate significantly with many of the skills tested, we instead controlled for age in our partial correlations, and we considered raw literacy scores, as standardised scores already take age into account.

As shown in Table 3, faster reading of both conventional and textese messages, and more accurate reading of textese messages, correlated significantly and positively with all three literacy scores (spelling, reading, non-word reading). Faster times to compose both conventional and textese messages also correlated significantly and positively with spelling and real-word reading. There were also significant intercorrelations between texting task scores, and between the literacy scores, but these are not theoretically interesting and are not reported here. Although the number of reading errors was small, it should be noted that time and accuracy of reading textese messages correlated significantly and negatively ($r = -.502, p < .001$). This suggests that overall, children read messages quickly because they were good at deciphering textisms, and not because they simply raced inaccurately through them.

These results suggest that being fast at deciphering textisms is related to better literacy skills. However, this relationship may be driven mainly by the more general ability to read quickly in conventional English. Thus, we conducted three hierarchical regression analyses, shown in Table 4. These examined whether the speed with which children read aloud messages written in textese could predict their raw spelling, reading, and non-word reading scores, beyond the effects of age and of speed of reading similar texts written in conventional English. In each analysis, textese reading time accounted for 10-13% of variance in literacy scores. This was significantly beyond the effects of age and conventional message reading time, which together accounted for about 28%, 21%, and 9%, respectively, of the variance in spelling, reading, and non-word reading scores. Similar analyses were not conducted for writing speed. The participants had used two text entry methods, and dividing the sample
further would mean insufficient numbers for regression analyses, which must be already considered cautiously for the analyses we did conduct.

It should be noted that in contrast to previous research with children in this age group (Plester et al., 2008, 2009), the proportion of textisms used (although very similar to that previously reported) did not correlate significantly with literacy scores. Exploratory correlations (despite the small ns) revealed that these correlations also did not reach significance even if only the multi-press texters were considered, and so the difference cannot be attributed simply to the inclusion of predictive texters in our study.

Discussion

This study examined 10- to 12-year-old children’s use and proficiency with textese and its relationship with traditional literacy skills. Most of the participants (86%) reported using text messaging, and of these, 61% normally used the predictive entry method, and 39% used the multi-press method. These results confirm previous findings that most pre-adolescent Australians now use text-messaging, and that predictive entry is growing in popularity. The wide range of estimates of the number of messages sent and received per day emphasises the need to investigate the validity of self-report measures of texting behaviour in this age group.

Textese is an important feature of text-message writing, and yet it is not clear that the use of this abbreviated spelling system consistently enhances the efficiency with which messages are read, or even written. One aim of this study was thus to compare predictive and multi-press texters’ speed and accuracy when reading and writing messages in textese and conventional English. As hypothesised, all children were slower and less accurate when reading textese than conventional messages regardless of texting experience or texting method. These findings replicate those of Neville (2003) with 11- to 16-year-olds, and of Kemp (2010) with undergraduates. However, in contrast to Neville’s and Kemp’s findings, the current participants were no faster to compose messages in textese than in conventional
English, despite using a significantly higher proportion of textisms when asked to write as if texting a friend (mean 35%) than in normal English spelling (3%). This is an unexpected finding, given the widespread use of textese among these children, and possible explanations are discussed below.

We also considered the effect of texting method on children’s performance. Predictive texters, whose texting method requires fewer key-presses than multi-press entry, were twice as fast at writing both message types than predictive texters, and even faster compared to non-texters. Both text entry method and practice clearly improve writing speed. Children who normally used multi-press entry produced significantly more textisms when asked to write as if texting a friend (48%) than did predictive texters (27%). This is the first study to compare predictive and multi-press texters, and the results suggest that predictive texting is indeed faster for children than multi-press texting, whether or not textisms are used.

Unexpectedly, multi-press texters were significantly slower at reading both textese and conventional messages than predictive texters. This suggests that exposure to textese does not improve reading fluency, either overall, or specifically for textese. Alternatively, the children who chose to, or who needed to, use multi-press entry (because of their phone type) may simply have been slower readers than children who use predictive texting, even if their untimed reading proficiency did not differ significantly on the standardised reading tasks. It is possible that children of higher socio-economic status (SES) had earlier access to more sophisticated mobile phones featuring predictive input mode. However, the schools included were of fairly uniform upper-middle SES, and the predictive and multi-press groups reported having texted for very similar lengths of time. Future research should consider the differences between texting groups more carefully to help resolve this question.

We also studied the effects of texting experience, by comparing children who normally used multi-press entry with non-texters, who used also the multi-press method in this study.
Multi-press texters were indeed significantly faster at composing both message types than non-texters, which suggests that practice does help speed message typing. However, multi-press texters also used significantly more textisms (48%) than non-texters (31%), a difference not found to be significant by either Neville (2003) or Plester et al. (2008). Children who text today might be exposed to more textisms than children seven years ago (when Neville’s data were collected), and thus find themselves able to produce more textisms (proportions not reported by Neville). Plester et al. had their participants translate English words into textisms, whereas our participants were instructed to write as if texting a friend. This might have been more difficult to judge for non-texters, and may also help to explain these discrepant findings.

Despite their greater use of textisms, multi-press texters were no faster at reading textese messages than non-texters, a result which contradicts Neville’s (2003) similar comparison. Again, it may be that our multi-press texters were particularly slow readers (although the direction of causality cannot be determined from this cross-sectional study). Greater general exposure to textese may also give all children recognition knowledge of many textisms, even if non-texters cannot produce them as easily, as suggested above. This idea is supported by the fact that all three texting groups made very few errors in reading textese, perhaps because we used textisms drawn initially from the participants and their peers.

The current study showed that as in previous research (Neville, 2003; Kemp, in press), having to read messages in textese hindered both speed and accuracy. However, our novel finding was that using textese in writing did not significantly reduce our participants’ typing time, irrespective of texting method or experience. Nevertheless, these children continued to use textese in their messages. Why might this be?

One possibility is that our findings do not fully reflect children’s usual texting proficiency. Ethical considerations (parents’ concern about researcher access to children’s phone numbers, and teachers’ reluctance to have phones used at school) precluded us from asking children to
use their own phones for this study. The use of one experimental phone did keep conditions equal for all participants. However, for predictive texters especially, more valid measures of message composition speed would have come from allowing children to type on their own phones, which allow textisms to be programmed in by the user. In our study, predictive texters had to switch to multi-press to type in textisms. However, such switching is common, and many children reported doing so in their everyday texting. Future research should investigate differences in writing speed when texters use their own mobile phones. In any case, it may be that with practice, typing in textese will become faster than in conventional English, as has been shown in older children (Neville, 2003) and adults (Kemp, in press).

Children’s decision to use textese is probably governed by more than just a desire for reducing writing time, especially as even our predictive texters used textisms 27% of the time. Textisms may be used to save on screen-space and thus on money, a potential concern for younger participants or their parents (Grinter & Eldridge, 2001). However, it seems likely that there are other motivations as well. As some writers have suggested (e.g., Crystal, 2008; Plester & Wood, 2009), textese may provide the chance to ‘play’ with words and their spellings, an opportunity not usually available to children learning conventional reading and writing. Our participants seemed to enjoy this orthographic freedom; indeed, many asked excitedly “do we get to write in text spelling?” Children may also employ textese to create and maintain discourse communities, to show membership of a social group, or to assert their social identity (e.g., Green, 2003; Lewis & Fabos, 2005). Such social motivations may easily override any losses in efficiency associated with textese. Future research should further examine the reasons behind the popularity of textese in this age group, despite its apparent ineffectiveness in reducing writing and reading time.

This study also investigated links between textese use and entry method, and more conventional literacy abilities. We found no significant differences between the three texting
groups on the measures of spelling, reading, and nonword reading. This suggests that for this age group, at least, neither the use of texting, nor the choice of text entry method, is associated with higher or lower literacy scores. This is further evidence against media concerns about a negative role for textese use in children’s literacy attainment.

To keep group size as large as possible, we conducted correlational and regression analyses with the whole sample, rather than dividing into texting groups, and we controlled for age and used raw literacy scores. Faster writing of both conventional and textese messages was significantly correlated with both spelling and reading scores (although not with non-word reading). Faster reading of both conventional and textese messages, and greater accuracy at deciphering textisms were significantly correlated with all three literacy scores. The links with spelling, reading, and non-word reading scores could not be explained simply through general quickness at reading aloud: a regression analysis controlling for age and for conventional message reading speed revealed that textese reading speed accounted for a significant 10-13% extra variance for all three literacy skills. Thus, it seems that experience with textisms, and/or skill in deciphering them, can explain a significant amount of conventional literacy skills. This fits with previous findings (e.g., Plester et al., 2008, 2009) and supports the idea that the same skill set underlies the ability to manipulate the sounds and features of spoken, written, and texted language. As Plester and Wood (2009) point out, the ability to create or decipher phonetic abbreviations requires an awareness of the multiple sound-letter correspondences in English. Further, increased experience with reading and writing textese might lead to increased confidence and flexibility with manipulating language sounds, a key skill for developing reading prowess (e.g., Bradley & Bryant, 1983). It thus makes sense that experience with textese can reflect or even enhance children’s traditional literacy abilities, in contrast to media concern, which seems to have been based on speculation or at best on anecdotal evidence.
The proportion of textisms used by our participants was similar to that of other studies. However, in contrast to previous studies (Neville, 2003; Plester et al., 2008, 2009), we did not observe a significant correlation between textism use and any of our literacy scores. The reasons for this difference are not clear. Although the current method was different from that of Plester et al. (2008, 2009), it was the same as that of Neville (2003), and even when we considered only our multi-press texters (as in other studies), the relationship between textism use and literacy skills remained non-significant. Nevertheless, the significant links between textese reading and writing efficiency and literacy scores do support the general idea that children who are good at quickly creating and interpreting textisms are also proficient at spelling and reading familiar and novel words from standardised literacy tests.

These findings thus further undermine media claims that textese is ruining children’s spelling abilities. Moreover, it does not appear that children’s writing is being ‘overrun’ with textisms: only 2-4% of words in these children’s conventional English messages were written as textisms, and presumably the intrusion rate would be even lower in formal, school-based writing. Thus, concerned teachers and parents can be reassured that textese use does not appear to have a detrimental impact on children’s ability to read and spell conventionally, and that any links are actually positive ones. As children begin texting at earlier ages (Cupitt, 2008), and as ever more sophisticated keyboard configurations and input types become available, research will need to keep up with the concomitant changes in children’s texting behaviour, and links with more conventional literacy skills.
References


Appendix

Text messages used in mobile phone tasks (number of words/characters in parentheses)

Message 1. Conventional (21/102): Are you excited to be back at school tomorrow? I can’t wait for it to begin! What people did you see? Textese (21/78): R u xcited 2 b bak at skool 2morow? I cant w8 4 it 2 bgin! Wat peeps did u c?

Message 2. Conventional (20/109): When will we see you tonight? Because someone left a message about your friend being sick. Are you sick too? Textese (20/80): Wen wil we c u 2night? Cause some1 left a msg bout ur frend bein sik. R u sik 2?

Message 3. Conventional (19/108): Thanks for your great text message. Everyone forgives you and would like you to be here at basketball today. Textese (19/80): Thx 4 ur gr8 txt msg. Every1 4gives u and wood like u 2 b here at bsketbal 2day.

Message 4. Conventional (19/108): Please don’t be late if you come to Tom’s birthday next weekend because it’s a surprise! No-one can forget! Textese (19/81): Plz dont b l8 if u come 2 Toms bday nxt wknd cause its a surprise! No1 can 4get!
Table 1

Means and SDs for Time and Proficiency in Writing and Reading Conventional and Textese Text Messages, across Texting Groups

<table>
<thead>
<tr>
<th></th>
<th>Writing messages</th>
<th>Reading messages</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Time (sec)</td>
<td>Proportion textisms</td>
</tr>
<tr>
<td>Conventional messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predictive (n = 45)</td>
<td>124.60 (74.95)</td>
<td>0.04 (0.05)</td>
</tr>
<tr>
<td>Multi-press (n = 29)</td>
<td>265.24 (113.03)</td>
<td>0.02 (0.03)</td>
</tr>
<tr>
<td>Non-texter (n = 12)</td>
<td>327.17 (51.03)</td>
<td>0.03 (0.04)</td>
</tr>
<tr>
<td>Overall</td>
<td>200.29 (119.16)</td>
<td>0.03 (0.05)</td>
</tr>
<tr>
<td>Textese messages</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Predictive (n = 45)</td>
<td>125.84 (78.87)</td>
<td>0.27 (0.20)</td>
</tr>
<tr>
<td>Multi-press (n = 29)</td>
<td>244.10 (107.08)</td>
<td>0.48 (0.24)</td>
</tr>
<tr>
<td>Non-texter (n = 12)</td>
<td>322.17 (69.99)</td>
<td>0.31 (0.20)</td>
</tr>
<tr>
<td>Overall</td>
<td>193.12 (115.18)</td>
<td>0.35 (0.23)</td>
</tr>
<tr>
<td>Texting Group</td>
<td>WRAT spelling SS</td>
<td>Woodcock Reading SS</td>
</tr>
<tr>
<td>-------------------------------------------</td>
<td>------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Predictive texters (n = 45)</td>
<td>106.13 (8.17)</td>
<td>101.67 (7.76)</td>
</tr>
<tr>
<td>Multi-press texters (n = 29)</td>
<td>104.10 (17.87)</td>
<td>102.03 (12.72)</td>
</tr>
<tr>
<td>Non-texters (n = 12)</td>
<td>112.25 (18.20)</td>
<td>105.75 (12.03)</td>
</tr>
<tr>
<td>Overall</td>
<td>106.30 (13.76)</td>
<td>102.06 (10.28)</td>
</tr>
</tbody>
</table>
**Table 3**

*Partial Correlations (Controlling for Age) between Mobile Phone Task Measures and Raw Literacy Scores*

<table>
<thead>
<tr>
<th></th>
<th>Spelling</th>
<th>Word Reading</th>
<th>Nonword Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>ReadTimeConv</td>
<td>-.487**</td>
<td>-.421**</td>
<td>-.261*</td>
</tr>
<tr>
<td>ReadTimeTextese</td>
<td>-.548**</td>
<td>-.485**</td>
<td>-.376**</td>
</tr>
<tr>
<td>WriteTimeConv</td>
<td>-.312**</td>
<td>-.229</td>
<td>-.213</td>
</tr>
<tr>
<td>WriteTimeTextese</td>
<td>-.301*</td>
<td>-.271*</td>
<td>-.258*</td>
</tr>
<tr>
<td>ReadAccuracyTextese</td>
<td>.287*</td>
<td>.249*</td>
<td>.318**</td>
</tr>
<tr>
<td>WriteTextismsTextese</td>
<td>.114</td>
<td>.160</td>
<td>.001</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01.
Table 4

*Summary of Hierarchical Regression Analyses Predicting Textese Message Reading Speed, Controlling Age and Conventional Message Reading Speed*

<table>
<thead>
<tr>
<th>Step, Predictor</th>
<th>Spelling</th>
<th></th>
<th>Reading</th>
<th></th>
<th>Non-word Reading</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
<td>$\beta$</td>
<td>$\Delta R^2$</td>
</tr>
<tr>
<td>1. Age</td>
<td>.062</td>
<td>.052</td>
<td>.051</td>
<td>.045*</td>
<td>.026</td>
<td>.019</td>
</tr>
<tr>
<td>2. ReadTimeConv</td>
<td>-.298**</td>
<td>.225**</td>
<td>-.224*</td>
<td>.166**</td>
<td>-.135</td>
<td>.074*</td>
</tr>
<tr>
<td>3. ReadTimeTxt</td>
<td>-.393**</td>
<td>.108**</td>
<td>-.411**</td>
<td>.118**</td>
<td>-.303*</td>
<td>.127**</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01.