A Preliminary Study of Children’s Reading Preference for Different Online Fonts

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ABSTRACT

This study examined passages containing the fonts, Times New Roman, Courier New, Comic Sans MS, and Arial at 12- and 14-point sizes for differences in perceptions of ease of reading, attractiveness, desire to be used in schoolbooks, as well as general font preference when read by children. A significant main effect of font type was found in that Comic Sans MS was perceived as being the easiest to read, most attractive, and was the most desired to be used in schoolbooks. A marginal effect of font size, favoring the 14-point size was found for schoolbook preference. The 12-point Comic Sans MS was the most preferred font type.

INTRODUCTION

Many children today are reading large amounts of text on computer screens. In fact, currently there is a drive to supplement or even replace some traditional pen and paper lectures and tests with computer-based ones. However, to date there has been very little research specific to a younger population investigating preferences for different types and sizes of fonts for reading online. This study sought to address this need by examining four types of fonts at 12- and 14-point sizes in order to help determine the font combination that is perceived as most readable on computer screens and most preferred by children.

Participants

Twelve participants (5 males, 7 females) volunteered for this study. They ranged in age from 9 to 11 years old and attended 4th and 5th grade. All participants had 20/20 or 20/20 corrected vision. Most participants (91%) had at least some experience reading text on computer screens.

Font Type/Size Combinations

This study examined fonts that are commonly seen in children’s text. To do this, we used the serif fonts, Times New Roman (Times) and Courier New (Courier), as well as the sans serif fonts, Arial and Comic Sans MS (Comic).
Times and Arial are very common fonts for their respective font type. Courier is a common non-proportional font, whereas Comic has become a popular font for child-related reading material. The different font types and sizes are shown below in Table 1.

**Table 1.** 12- and 14-point serif and sans serif fonts studied

<table>
<thead>
<tr>
<th>12-point size</th>
<th>14-point size</th>
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</thead>
<tbody>
<tr>
<td>Times New Roman</td>
<td>Times New Roman</td>
</tr>
<tr>
<td>Courier New</td>
<td>Courier New</td>
</tr>
<tr>
<td>Arial</td>
<td>Arial</td>
</tr>
<tr>
<td>Comic Sans MS</td>
<td>Comic Sans MS</td>
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</tbody>
</table>

**Task Design**

A 4 x 2 font (type x size) within-subjects design was used to analyze perceptions of font readability. Preference was measured by using a Friedman $\chi^2$. Font conditions were compared by having participants read eight passages. Both the fonts and the passages were counter-balanced by means of a Latin square design. The passages were short children’s stories drawn from Whootie Owl's Fairytales (1), which were written at the 4th and 5th grade reading level. The passages were adjusted to have approximately the same length (an average of 581 words per passage, S.D. of 16 words) and had horizontal margins set at 640 pixels. The amount of words per line varied as a result of the width of the fonts within the different type/size combinations. The color of the font in all passages was black on a white background. A Pentium II based PC computer, using a 60 Hz, 96dpi 15" monitor with a resolution of 1024 x 768 was used.

**Procedure**

Participants were asked to read eight passages, each with a different font combination. In order to assure that the participants read the passages, ten substitution words were randomly placed throughout each passage. The participants were instructed to identify these words by stating the substituted words out loud. The substitution words were designed to be seen as inappropriate for the context of the passages when read carefully and varied grammatically from the original words—for example the noun “sun” being replaced with the adjective “fun.”

After reading each passage, participants answered a perception of readability questionnaire. The questionnaire consisted of a 6-point Likert scale, with 1 = “Not at all” and 6 = “Very Much” as anchors. The questionnaire items were as follows: “The story’s print was easy to read,” “The story’s print was nice looking,” and “I would like my schoolbooks to have this type of print.” After participants read all eight passages and answered the respective questionnaires, they ranked the eight type/size font combinations for general preference.

**RESULTS AND DISCUSSION**

**Perceptions of Font Ease of Reading**

An analysis of the eight font type/size combinations for perceptions of ease of reading revealed a significant main effect of font type [$F (3, 33) = 3.84, p < .009$]. Post hoc analysis indicated that the Comic font had significantly higher perceptions of ease of reading than Times or Arial, but not Courier (see Table 2). No other main effects or interactions were significant.

**Perceptions of Font Attractiveness**

An analysis of the perceptions of font attractiveness revealed a significant main effect for font type [$F (3, 33) = 3.9, p < .018$]. Post hoc analysis indicated that the Comic font was perceived as being the most attractive font presented (see Table 2). No other main effects or interactions were significant.
Desire to Use Font Type/Size in Schoolbooks

Examining the font combinations for the desire to be used as text in schoolbooks found a significant main effect for font type [F (3, 33) = 4.8, p < .007] and a marginal effect for font size [F (3, 33) = 4.0, p < .070]. Post hoc analysis revealed that the Comic font was significantly chosen over the two serif fonts, Times and Courier, but not over the sans serif font Arial, as the font choice for schoolbooks (see Table 2). Moreover, participants preferred the 14-point to the 12-point font size for reading schoolbooks via the computer (see Table 2). No other main effects or interactions were significant.

<table>
<thead>
<tr>
<th>Table 2. Perceived readability of the font type/size combinations</th>
</tr>
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<td></td>
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<tr>
<td>Easy to read</td>
</tr>
<tr>
<td>Attractiveness</td>
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<tr>
<td>Use in schoolbooks</td>
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</tbody>
</table>

Means (S.D.s) for font type; \(^a\)(p < .05). Means (S.D.s) for font size; \(^b\)(p < .07).

Font Preference

Analyzing participants’ general preference for each font type/size combination revealed a significant difference (p < .004) in ranking. Post hoc analysis found that 12-point Comic font was significantly preferred to the 12-point Times and Courier fonts (see Figure 1).

![Figure 1. Mean ranking of 1st choice to last choice (8th).](image)

Conclusions

Preliminary analysis of the font combinations revealed that the Comic font was significantly perceived as being easier to read and more attractive. Along with Arial, it was also preferred over the serif fonts for use in schoolbooks, as well as being the most preferred font type. Interestingly, font size did not play a large role in preference, only having a marginally significant effect on the choice of font for schoolbooks. This study, however, is limited by its small sample size. Further studies will seek to examine the effects of font type and size on reading time, as well as reading accuracy by using a larger sample pool.

REFERENCE

(1) Whootie Owl's Fairytales® Whootie Owl Productions, LLC. Available at: http://www.storiestogrowby.com/
ABOUT THE AUTHORS

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