Text comprehension abilities of Korean 1st graders with and without developmental dyslexia in three access modes: Listening, Oral reading, and Silent reading

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INTRODUCTION

1 Text comprehension in three access modes:
   listening vs oral reading vs silent reading

2 Similarities and differences in text comprehension with developmental dyslexia in a shallow orthographic context, the Korean language

METHOD

- **Subjects**
  1. 1st graders with Developmental Dyslexia (N=18)
     a. poor in the word decoding test in KOLRA, standard score below 75 (X=38.39, SD=24.05)
     b. normal listening comprehension in KORLA (X=67%ile, SD=22.19)
     c. normal intelligence (K-CTONI-2) (X=96.44, SD=12.03)
  2. Normally developing 1st graders (N=18)
     a. no difficulties in reading and academic skills according to parents and teachers
     b. normal in semantic knowledge based on Receptive Vocabulary Test results
     c. normal intelligence

- **Text comprehension in the three access modes of listening, oral reading, and silent reading**
  a. Each text was composed of five to six short sentences including about 100 syllables and 34 words(Korean word segment)
  b. 5 questions in each text, 10 in each of the access modes, for a total of 30 questions.
  c. Text exposure were counterbalanced, and answers were recorded for each text from three access modes

- **An example of text and Q & A**

<table>
<thead>
<tr>
<th>TEXT 2.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today is March 20th. Finally, it's my birthday tomorrow. I gave an invitation to my friends. But I forgot to write the time on the invitation. So I told my friends to come tomorrow at 4:00. I will have fun with my friends at my birthday party tomorrow.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q</th>
<th>Listening</th>
<th>Oral Reading</th>
<th>Silent Reading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dyslexic</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Normal</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dyslexic</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Normal</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dyslexic</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Normal</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dyslexic</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Normal</td>
<td>5</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Dyslexic</td>
<td>0</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

- **Statistics with SPSS 25 two-way ANOVA with one repeated measure**
  - variable 1 Group: Dyslexia vs Normal
  - variable 2 Access modes: Listening vs Oral reading vs Silent reading

RESULTS

- There was a statistically significant interaction effect on Group * Access Modes ($F_{(2,68)}= 6.549$, $p=0.003$).
- There was no differences among three access modes for normally developing children ($F$, $p$).
- There was a statistically significant difference among the three access modes for dyslexic 1st graders ($F$, $p$) (post hoc: Listening>Silent reading)

DISCUSSION

- Korean 1st graders with developmental dyslexia are in need of support for text comprehension in all three modes: listening, oral reading, and silent reading.
- The gap between NR and dyslexics seemed to be greater in silent reading and oral reading compared to listening.
- Oral reading needs to be strongly recommended for dyslexic children in initial stage of text comprehension.
- Individual differences in three access modes among dyslexics need to be considered for individualized support.
- Children with developmental dyslexia generally exhibited poor performance in both reading access modes, especially compared to NR. This can be expected given how difficult it is for children with dyslexia to perform in a classroom setting which requires reading skills.
- Componential model of reading needs to be applied to the Korean context with further studies

REFERENCE