A Comparison Between Silent Reading, Accelerated Oral Reading, and Altered Auditory Feedback Reading

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Disclosure Statement

• No authors have any relevant financial relationship for the content presented in this presentation.

• This research was funded in part by a Faculty Research Seed Grant provided by the Valdosta State University Graduate School.

Introduction

Reading

• Reading consists of two distinct although interrelated processes (see Reading Processes Model)
  – Word recognition
  – Comprehension
• Deficits in reading comprehension abilities are common in those with language-learning disabilities.

Introduction

Reading Fluency

• Fluent/automatic readers have little difficulty with word reading which allows most cognitive resources to be devoted to comprehension.
• Nonfluent readers must devote many resources to word reading which can have a detrimental effect of comprehension.

Introduction

Comprehension Enhancement

• Previous research has demonstrated gains in both word recognition accuracy and comprehension for those with reading disorders during oral reading tasks utilizing:
  – Secondary auditory signals
  – Accelerated text presentation
• This finding has been extended to both adults and school-aged children with reading disorders.

Purpose

• However, no study has included a measure of silent reading as a baseline reading measure.
• The purpose of this study was to investigate the difference between the enhanced oral reading comprehension abilities experienced while using frequency altered feedback and reading acceleration and reading comprehension when engaged in silent reading.
Methods

• Participants
  – 4 females, 4 males previously identified with learning disorder

• Pre-Experimental Testing:
  – Test of Word Reading Efficiency – 2nd Ed.
  – CELF-IV Receptive Vocabulary Battery
  – Silent Reading Rate
  – Oral Reading Rate

Means and Standard Deviations of Pre-Experimental Measures

<table>
<thead>
<tr>
<th>Pre-Experimental Measure</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>16.93</td>
</tr>
<tr>
<td>TOWRE Sight Word Efficiency</td>
<td>81.13 (3.88)</td>
</tr>
<tr>
<td>TOWRE Phonemic Decoding Efficiency</td>
<td>78.75 (6.9)</td>
</tr>
<tr>
<td>CELF Receptive Language Composite Score</td>
<td>76.57 (11.40)</td>
</tr>
<tr>
<td>Silent Reading Rate (words/second)</td>
<td>1.98 (0.44)</td>
</tr>
<tr>
<td>Oral Reading Rate (words/second)</td>
<td>1.72 (0.45)</td>
</tr>
</tbody>
</table>

Methods: Experimental Procedure

• Silent reading tasks were adapted from the Gray Silent Reading Tests (GSRT).

• Oral reading tasks were adapted from the Gray Oral Reading Tests – 5th Ed. (GORT-5).

• All reading tasks were presented on a computer screen with the text scrolling left to right across the screen at a predetermined rate controlled by Adobe Premiere.

Means and Standard Deviations of Experimental Comprehension Grade Equivalent Measures

<table>
<thead>
<tr>
<th>Experimental Measure</th>
<th>Mean (SD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-Altered GORT-V Comprehension Grade Level</td>
<td>4.75 (.69)</td>
</tr>
<tr>
<td>Altered GORT-V Comprehension Grade Level</td>
<td>6.25 (.99)</td>
</tr>
<tr>
<td>Non-altered GSRT Comprehension Grade Level</td>
<td>10.49 (2.65)</td>
</tr>
<tr>
<td>Altered GSRT Comprehension Grade Level</td>
<td>10.43 (3.37)</td>
</tr>
</tbody>
</table>

Methods: Data Analysis

• All scores were calculated as grade equivalents according to the GSRT and GORT-5.

• All grade equivalents were subjected to a repeated measures ANOVA in order to investigate mean differences in performance as a function of reading condition (experimental vs. control) and reading modality (oral vs. silent).
Results

• A significant main effect of reading modality was found
  \[ F = (1, 7) 19.613, p<.05 \]
• On average, the participants obtained higher comprehension grade levels when reading silently (9.94) than when reading aloud (4.99).

Discussion

• Post-hoc testing revealed:
  – Reading silently under normal conditions yielded significantly greater comprehension levels than when reading aloud in the experimental or control condition.
  – Reading aloud during the experimental condition yielded significantly greater comprehension levels than when reading aloud in the control condition.

Discussion

• Although the current study demonstrated that reading along with altered auditory feedback at more rapid rates improves ORAL reading comprehension, those improvements did not reach the level of comprehension obtained when reading silently at either pace.

Discussion

• It is possible that silent reading better focuses cognitive resources upon attention instead of comprehension.
• It is also possible that silent reading represents a more relaxing natural reading environment for teenagers due to lessened penalty for word reading errors.

Implications

• These findings indicate that when comprehension is most valued, silent reading should be incorporated.

• The implementation of treatment techniques that require alterations in reading styles should be considered with caution.

Limitations

• This study utilized a small sample
• This study focused upon older individuals (average age = 16.93) without reading specific diagnoses.
Future Directions

- More participants should be recruited for the current study protocol.

- Future studies should attempt to extend these findings to younger school-aged children.

References


