Background

- Most research on individual differences has used reading comprehension as the primary measure of reading ability.
- Recent research suggests spelling skill may be a more precise predictor of reading ability.
- According to the lexical quality hypothesis (LQH), high and low-skill readers are differentiated by the quality of word representations:
  - High quality: accurate spelling, sound, and meaning components and strong connections between them
  - Low quality: absent, inaccurate, or unspecified spelling, sound, and/or meaning components, and weak connections between them
- During reading, spelling is the primary pathway to activating that word's meaning.
- Measuring spelling skill directly measures the accuracy of the spelling component.
- Reading comprehension may measure a variety of skill (e.g., working memory, inferencing).
- Thus, high-skill spellers are thought to have high-quality spelling representations that will facilitate activation of word meanings.

Current Study: The current study investigates differences in total reading time when participants are assessed for both reading comprehension ability and spelling skill.

Methods

Participants: One hundred and eight Kent State University students participated in this study for course credit.
- 12 removed for failing to answer comprehension questions with 80% accuracy; 6 removed for track loss.
- 90 participants contributed data.

Skill Assessment

- Spelling recall measure.
- Nelson-Denny Test of Reading Comprehension.

Stimuli

- Half of the sentences contained strong context.

Context: Viciously snarling and growling, the boxer soon barked at the baggage attendant.
Neutral: As we had all expected and feared, the boxer soon barked at the baggage attendant.

Procedure

- Participants read 16 experimental sentences followed by comprehension questions while their eye movements were recorded.
- The average comprehension question score was 86%.

Skill Classification Groups

<table>
<thead>
<tr>
<th>Skill Level</th>
<th>Spelling</th>
<th>Comprehension</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>27</td>
<td>16</td>
</tr>
<tr>
<td>Average</td>
<td>40</td>
<td>41</td>
</tr>
<tr>
<td>High</td>
<td>23</td>
<td>33</td>
</tr>
</tbody>
</table>

Reading Scores x Spelling Scores

Total Reading Time

Conclusions

- Spelling is a valid measure of reading ability.
- Spellers are significantly faster readers than comprehension comprehenders.
- Low-skill spellers are significantly faster readers than high-skill comprehenders.
- Better model fit for spelling skill than comprehension skill.
- Spelling skill is a better predictor of total reading time than reading comprehension skill.

References


Results

Analyzed using a Linear Mixed-Effect Model (LMM) using R statistical software (R project, 2013).
- Moderate correlation between spelling and comprehension skill (r=.31, p<.05).
- Greater number of high-skill readers than high-skill spellers.
- Main effects of spelling and comprehension skill:
  - High-skill readers read more quickly than low-skill readers.
  - Replicates previous individual differences research with spelling measure.
- High-skill spellers are significantly faster readers than high-skill comprehenders.
- Low-skill spellers are significantly faster readers than low-skill comprehenders.
- Better model fit for spelling skill than comprehension skill.
- Spelling skill is a more precise measure of reading ability than reading comprehension skill.