Vocabulary and Reading in Secondary School (VaRiSS)

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Vocabulary and Reading in Secondary Schools (VaRiSS) Project

- Vocabulary contributes to reading development
- Reading provides opportunities for new word learning

- Fostering reading and vocabulary is essential for learning across the curriculum
- ‘Reading to learn’ a particular focus in secondary school
- Little data on vocabulary and reading in secondary school
Project overview

- Study 1: Longitudinal

- Study 2: Learning new words with access to printed forms

- Study 3: Learning new words while reading – *watch this space!*
Longitudinal study
Rationale

Vocabulary  ←  Reading
Design and participants

Analysed Phase 1 and 2

Data collection finishes this week!

<table>
<thead>
<tr>
<th>Phase</th>
<th>Ages (yrs) (std dev)</th>
<th>N</th>
<th>Gender Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>12.01 (.33)</td>
<td>208</td>
<td>48.6% girls</td>
</tr>
<tr>
<td>Phase 2</td>
<td>13.07 (.34)</td>
<td>195</td>
<td>49.7% girls</td>
</tr>
<tr>
<td>Phase 3</td>
<td>14.01 (.33)</td>
<td>186</td>
<td>48.4%</td>
</tr>
</tbody>
</table>

Analysed Phase 1 and 2

Data collection finishes this week!

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12.01 yrs (.33) | 13.07 yrs (.34) | 14.01 yrs (.33)
N = 208 | N = 195 | N = 186
48.6% girls | 49.7% girls | 48.4%
Method

- 6 hours with each pupil (2 hours per year)
- Nonverbal reasoning
- Oral vocabulary (two measures)
  - Receptive, expressive, depth and breadth
  - Also, semantic relationships between words (where possible)
- Word-level reading (six measures)
  - Nonwords, regular words, irregular words, accuracy, efficiency
- Reading comprehension (one measure)
  - Minimum four passages (individual differences, reliability)
Summary of results

- Between 15% and 20% of pupils are experiencing reading difficulties at the beginning of secondary school. Can’t assume that secondary pupils can read effectively.

- Limited development in this period

- Remarkably high longitudinal stability in oral vocabulary, reading comprehension and word reading in early adolescence, indicating:
  - Good measurement
  - Performance at 12 years explains almost all/all of the variance at 13 years
  - Rankings are fixed

- No evidence for the hypothesised vocabulary – reading relationships
Orthographic facilitation
Rationale

- Does the presence of orthography facilitate oral vocabulary acquisition?

- Theoretical and practical motivation

"caracal" - mammal, type of wild cat, eats birds

Orthographic form

Phonology (sound) ↔ Semantics (meaning)
Background

- Children more likely to learn words that have been taught with support from orthography
  - Typically developing children (Ricketts et al., 2009; Rosenthal & Ehri, 2008), ASD (Lucas & Norbury, 2013, Ricketts et al., 2015), SLI (Ricketts et al., 2015) and Down syndrome (Mengoni et al., 2013)

- Implications
  - Emphasise orthography whilst teaching new vocabulary
  - Incorporate into intervention approaches
  - In the classroom, strategy is common but not universal (66% in observations of 147 classrooms including pupils with SLCN)
New directions

- Instructions: compare explicit and incidental conditions for first time
- Replicate orthographic facilitation effect in older children (12-13y)?
Words and procedure

Prior to training
- Background measures & pre-test

Training session 1
- Phonological
  - Repeat words
  - Repeat & tap syllables
- Phonology-semantic
  - Repeat word
  - Listen to definition
  - Listen to word in sentence context
  - Repeat definition
  - Synonym substitution

1 week

Training session 2
- Phonological
- Phonology-semantic

1 week

Post-tests
- Semantic
- Orthographic
  - Correct definition?
  - Cued definition
  - Definition recognition

Half of words: Orthography present
Semantic learning ($M \pm SE$)

Correct definition = 2, correct cued definition = 1, otherwise = 0
Thus max = 16 for each bar
Collapsed by age (ns)

- Orthography – $p = .01$
- Age - ns
- Presentation – $p = .03$
Conclusions

- Equivalent learning in 9 and 12 year olds
- Orthographic facilitation for oral vocabulary learning
  - Consistent with previous studies
  - Using paradigm that teaches real polysyllabic words and richer semantic representations
- Explicitly emphasising orthography leads to benefit (but general)
  - General increase in engagement with the task?
  - Instructions prime participants to generate their own orthography?
Take home messages

- Longitudinal study
  - Some pupils have poor vocabulary and reading in the early secondary years
  - Little growth during this period of development
  - Rankings seem to be fixed

- Orthographic facilitation
  - Children and adolescents are more likely to learn words that have been taught with support from orthography
  - Especially if attention is drawn to orthography and how it could be useful
Thanks and acknowledgements

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The VaRiSS project: www.variss.org; @varissproject; www.facebook.co.uk/varissproject