Can we improve comprehension of vocabulary in secondary-aged students with language impairments? Evaluating the effectiveness of therapy in a Key Stage 3 Science lesson

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Background

- Children with SLI frequently experience difficulties with comprehension of subject specific vocabulary (Parsons, Law & Gascoigne, 2005). However, vocabulary instruction is neither frequent nor systematic in most schools.
- Previous studies suggest that the teaching of specific vocabulary within a practical teaching context can support students’ learning of scientific concepts (Sim 1996;1998)
- Research into comprehension and teaching of curriculum vocabulary is limited and thus, results cannot be assumed to generalise to the wider population of language impaired children.

Methods

- Participants
  - Eighteen students attending a specialist school for children with Specific Language Impairment.
  - Age: 12.3 – 13.11
  - Students are from two unmatched KS3 classes (Class A and Class B)
  - All students are covering the same topics in Science
- Study Design
  - Classes were separated into Therapy vs. Waiting Controls
  - Class A received direct input from SLT in first term
  - Class B received direct input from SLT in second term
  - Class A are currently receiving therapy again during third term.
- Testing
  - Participants were tested pre-therapy and post-therapy each term using a multiple-choice test, assessing comprehension of words within context.
  - The target words in the Autumn Term were a mix of nouns and verbs, but solely verbs in the Spring.

Therapy

<table>
<thead>
<tr>
<th>Term</th>
<th>Autumn 10</th>
<th>Spring 11</th>
<th>Summer 11</th>
</tr>
</thead>
<tbody>
<tr>
<td>Target Vocabulary</td>
<td>nouns/verbs</td>
<td>verbs</td>
<td>verbs</td>
</tr>
<tr>
<td>Class Receiving Therapy</td>
<td>A</td>
<td>B</td>
<td>A</td>
</tr>
<tr>
<td>Control Class</td>
<td>B</td>
<td>A</td>
<td>B</td>
</tr>
</tbody>
</table>

• Each therapy block consisted of ten fifteen-minute sessions of classroom-based therapy led by an SLT.
• Each session focused on the comprehension of one “word of the week” central to the science lesson topic.
• Therapy consisted of a multi-faceted approach to learning to include both semantic and phonological components.
• Intervention included strategies such as direct instruction, facilitating discussion, picture/symbol construction and quiz/games.
• Students received no direct follow up work on WOW. However, this was offered for independent learning.

Results

- **Autumn Term:**
  - Mean raw scores, mean normalised gain scores and their standard deviations calculated for each class each term
  - Normalised gain scores: amount of change made ÷ amount of change possible before reaching ceiling (max = 1). These were used to take ceiling effects into account.

- **Spring Term:**
  - Mean raw scores, mean normalised gain scores and their standard deviations calculated for each class each term


Conclusions

- Results so far suggest that lower ability students benefit significantly from increased SLT support during science lessons.
- It may be that higher ability students make effective progress with the differentiated teaching of Science alone.
- More conclusive results will be available following therapy this term.

References

- Parsons, Law & Gascoigne (2005) Teaching receptive vocabulary to children with specific language impairment: a curriculum based approach. Child Language Teaching and Therapy
- Sim I (1996). Two Into One Will Go: Developing science for pupils with speech and language difficulties. Child Language Teaching and Therapy
- Sim I (1996). One Plus One Equals Three! Improving Vocabulary acquisition and learning in pupils with speech and language impairments. Child Language Teaching and Therapy

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