Vocabulary depth and the relationship to reading skills in school beginners

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Content of this talk

1. Research project & design
2. Vocabulary breadth and depth
3. Assessing vocabulary depth
4. Relationship and interplay of vocabulary knowledge and reading skills
1. Research project & design

Development of vocabulary and reading skills. An investigation in primary school (grades 1 - 3)

2017 – 2021
9 different reading primers

<table>
<thead>
<tr>
<th>Sample 1st grade (L1)</th>
<th>n=348</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>151 boys, 197 girls</td>
</tr>
<tr>
<td>Age mean</td>
<td>6.9 years</td>
</tr>
<tr>
<td>Age range</td>
<td>6-8 years</td>
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<tr>
<td>Number of classes</td>
<td>39</td>
</tr>
</tbody>
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16.08.2019
## EnWoLe: Methods & Tests

<table>
<thead>
<tr>
<th>Skills to be assessed</th>
<th>Tests</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 VOCABULARY</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 Vocabulary breadth</td>
<td>Lenhard et al. (2015): PPVT*</td>
</tr>
<tr>
<td>1.2 Vocabulary depth („precision of meaning“, definition skills)</td>
<td>Wechsler (2011): WISC–IV*</td>
</tr>
<tr>
<td>1.3 Vocabulary depth („network knowledge“, antonyms/hyperonyms)</td>
<td>Glück (2011): WWT*</td>
</tr>
<tr>
<td>1.4 Rapid Automatized Naming (access speed) – letters, numbers, colors</td>
<td>Mayer (2016): Tephobe *</td>
</tr>
<tr>
<td><strong>2 READING</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 Word reading</td>
<td>Lenhard &amp; Schneider (2017): ELFE II</td>
</tr>
<tr>
<td>2.2 Sentence reading</td>
<td>Lenhard &amp; Schneider (2017): ELFE II</td>
</tr>
<tr>
<td>2.3 Text reading</td>
<td>Lenhard &amp; Schneider (2017): ELFE II</td>
</tr>
<tr>
<td>2.4 Pseudoword reading (reading fluency)</td>
<td>Moll, Landerl (2014): SLRT-II</td>
</tr>
<tr>
<td><strong>3 CO-VARIABLES</strong></td>
<td></td>
</tr>
<tr>
<td>3.1 Age, gender, intelligence</td>
<td>Cattell, R. et al. (2012): CFT 1-R*</td>
</tr>
<tr>
<td>3.2 Phonological awareness</td>
<td>Stock et al. (2017): BAKO*</td>
</tr>
<tr>
<td>3.3 Indications on class (e.g. teaching materials)</td>
<td>Teacher‘s indications</td>
</tr>
</tbody>
</table>

* Condensed versions
2. Vocabulary breadth and depth
What does it mean to know a word?

Vocabulary knowledge

Vocabulary breadth
«how many words are known»
(Anderson & Freebody, 1981)

Vocabulary depth
«how well those words are known» (Read 1993, Nation 2001)

Same construction (Vermeer 2001)
related but independent, different development (Schmitt 2014).

Precision of meaning

Comprehensive word knowledge

Network knowledge
3. Assessing vocabulary depth
Why is vocabulary depth assessed?

• «understudied domain» (Hadley & Dickinson, 2018)

• Vocabulary depth (as measured by giving definitions of words) has been found to be a strong predictor for reading comprehension (Roth et al., 2002; Dickinson et al., 2010; Cain and Oakhill, 2014; Ouellette, 2006; Proctor et al., 2012)

Research question in our project:
What is the role and how is the development of VD in early reading acquisition?
How is vocabulary depth assessed?

“The reason why there is currently no measure of depth as a whole is partly due to depth being a very broad construct that cannot simply be measured in a single test or even practically in a battery of tests.” (Schmitt 2014: 921)
What does it mean to know a word?

Vocabulary knowledge

Vocabulary breadth
«how many words are known»
(Anderson & Freebody, 1981)

Same construction (Vermeer 2001)
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(Schmitt 2014).

Vocabulary depth
«how well those words are known»
(Read 1993, Nation 2001)

Read (2004):

Precision of meaning

Comprehensive word knowledge

Network knowledge
How is vocabulary depth assessed?

• Questions on types of word knowledge (Schmitt 1998; Chui 2006) → comprehensive word knowledge

• Semantic fluency tasks (e.g. Nation & Snowling 1998) → network knowledge

• Association tasks (e.g. Greidanus/Nienhuis 2001) → precision of knowledge/network knowledge

• Definitions, evaluated by means of scales (e.g. Ouellette 2006) → precision of meaning/network knowledge
Assessing vocabulary depth via a test of the «Wechsler Intelligence Scale for Children» (HAWIK-IV)

Advantages:
- For school children (6-16y.)
- Different word types (nouns, adjectives, verbs) → 15 items
- Feasible within the overarching research project

Challenges:
- Different goal (manual not adapted for our project, i.e. for further linguistic analyses)
- Polysemous words
- Distinction between definition skills and «precision of meaning»
Scoring according to HAWIK-IV

Example: **What is an umbrella?**

2 points: *it protects you from rain* (primary feature)
1 point: *you can hold it over your head* (true, but not sufficient)
0 points: *it has got a handle and it's round* (too general)

If the answer of the child is not clear or too general, you can ask once again.
Example of answers (translated from Swiss-German)

«suffering»
• if someone tells you that you are stupid, then you suffer
• if you are like kind of down
• If you are injured and lie on the floor

«nonsense»
• For example if he says he kissed his girlfriend, I’d say this can’t be, this is nonsense, because she only turned five
• bullshit

2: primary feature mentioned
1: answer not sufficient
0: answer too general
Scoring adaptations: Individual item approach

- Refinement to 4-point scale based on coding categories for each item (different word types require individual evaluation).

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bicycle
Object description  Designated use  Application

to force
Description  Example  Involuntary mentioned?  Agens?
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Interrater-reliability check

- All items were coded on all categories by two raters independently

- A third rater checked cases of disagreement and tried to discern systematic different coding patterns → adaption in coding manual
4. Vocabulary knowledge & reading skills

- reading
- RAN
- phonological awareness
- vocabulary
Conclusions

• In the absence of a standardized vocabulary depth measure, a definition test can serve as a proxy for certain aspects (precision of meaning, Read 2004). However,…
  – …definition styles / ability to define should not be confounded with precision of meaning.
  – …items need to be evaluated individually.
  – …responses depend on how and how often a question is asked.

• In the first grade, correlations to different reading skills are not strong. However, the results point in the direction that vocabulary depth is more closely related to complexer reading skills.
"Agora – where research meets the public"

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Thank you for your attention!