STAIRS4WORDS: A new adaptive test for assessing receptive vocabulary size in English, Dutch and German

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INTRODUCTION

- Studying language often requires a precise and reliable estimate of the language user’s vocabulary size [1].
- Current vocabulary tests are insufficient as they:
  1) ...employ a fixed order of items
  2) ...approximate item difficulty using word frequency
  3) ...involve abilities not related to word knowledge (e.g., picture recognition, sentence comprehension): E.g.

INCENTIVE

- Stairs4Words intends to overcome these problems:
  - Item difficulty is estimated using word prevalence [4] rather than frequency.
  - Item difficulty is tailored to participant’s performance level using a staircase procedure [5].
  - Simple task: Participants indicate whether or not they know a given target word.
- The test will be available in Dutch, English, and German and run online


STAIRS4WORDS

Two tracks operating at the back-end, not noticeable to the participants: ‘Fast track’ and ‘Fine tuning’.

Target word presented in written form.

Fast track aimed at getting participant to vicinity of their end score.

Fine Tuning meant to determine their end score by applying staircase procedure.

Participant’s score is the last band where an entire quadruple was responded to correctly.

Back-end

- Fast track
  - Start: Band 20 (99% prevalent)
  - Words + non-words
  - Two consecutive no/incorrect responses (e.g. Band 40)

- Fine Tuning
  - Staircase procedure
  - Quadruples: 3 words + 1 non-word
  - 4 correct → 1 up
  - 1 incorrect → 1 down

PILOTS IN DUTCH STUDENTS WITH DIVERSE EDUCATIONAL BACKGROUNDS

CORRELATION BETWEEN PARALLEL VERSIONS

- Correlation between Stairs4Words and Peabody
  - Band Stairs4Words 2nd Run
  - Band Stairs4Words 1st Run
  - Word prevalence
  - r = 0.74, n = 193

- Correlation between parallel versions
  - Average band Stairs4Words
  - Word prevalence
  - r = 0.52, n = 193

CONCLUSIONS

- There is no obvious benefit of audio, or audio-visual presentation for either group of participants.
- Stairs4words is an efficient and reliable way of assessing vocabulary in young adults.