The development of a system identifying qualitative and quantitative characteristics of reading disability for Latvian readers

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Actuality

• Reading disability (RD) 5-10% of population;
• Reported inconsistency about definition and identification approaches of RD;
• RD is highly related to orthographical difficulty of the language and
• still not scientifically verified, what typical charasteristics of RD are in the context of Latvian orthography.
Components of reading ability (Snowling & Hulme, 2005)

- Phonology
- Alphabetical principle
- Reading fluency
- Reading comprehension
- Vocabulary/language

(RD - when in one of the components of reading ability or related cognitive processes changes are observed.)
DSM 4 distinguishes three diagnostic criteria:

A. Reading achievement as measured by individually administered standardized tests of reading accuracy or comprehension is substantially below that expected given the person's chronological age, measured intelligence, and age-appropriate education.

B. The disturbance in Criterion A significantly interferes with academic achievement or activities of daily living that require reading skills.

C. If a sensory deficit is present, the reading difficulties are in excess of those usually associated with it.
Alternatives of RD identification (Meisinger, Bloom, & Hynd, 2010):

- Discrepancy between reading achievement and IQ;
- Reading achievement < 85 standard scores;
- Longitudinal observation of reading achievement etc.
RD in English reader population (Velluntino, Fletcher, Snowling, & Scanlon, 2004):

- difficulty to identify separate words,
- several phonological difficulties,
- difficulty to identify word rhyme.

Can also be observed:
- omission or substitution of the words,
- poor reading comprehension,
- decreased reading fluency.

In addition can be writing and other difficulties.
Characteristics for RD in languages with transparent orthography (Lopez-Escribano & Katzir, 2008):

- phonological difficulties (they are universal),
- greater difficulties decoding rare words.

Rapid automatized naming (RAN) significantly predicts RD.
I. Sprugevica finds the relationship between reading ability and phonological awareness and rapid automatized naming. In early age—also letter recognition ability and verbal short-term memory plays significant role for reading ability (Sprugevica, 2003).

S. Tubele`s attempt to distinguish RD is based on knowledge from the literature in other languages (Russian, English), the author does not speak about specific of Latvian (Tūbele, 2008).
Latvian has longer words than, for example, English, hence may require higher information processing capacity at the level of phonemes.

Probably, for Latvian readers, similar to the other languages with clear orthography, rare word decoding and rapid automatized naming ability and other processes predict RD.
Research question:

1. What are the most important qualitative and quantitative characteristics of reading disability that could form identification system of reading disability for Latvian readers?
1. How characteristics (qualitative and quantitative) of language and cognitive processes differ for Latvian readers with RD and without RD?

2. How characteristics of language differ for Latvian readers with or without RD, controlling the level of intelligence?
3. Which characteristics of language and cognitive processes are the best predictors of RD?

4. How characteristics of language and cognitive processes predict RD, measured as qualitative categories (for example, mixes phonemes or not; visual reasoning ability dominates over verbal comprehension or not)?
Participants

- Study 1:
  three experts in special education, linguistics and psychology highly experienced working with RD, which will evaluate characteristics of RD for Latvian readers.

- Study 2:
  7-8 y.o. children (N=60; ~60% boys) with RD and control group equated by demographic variables (N=60) with average level of reading ability.
Measures

- Study 1:
  questionnaire with characteristics of RD given to experts for evaluation.

- Study 2:
  LMST-I  Reading achievement test (RAT) (Raščevska & Paegle, 2011); as a criterion for RD;
  DIBELSNext (Dewey, Latimer, Kaminski, & Good, 2011; adaptation in Latvia started);
LMST-I some subtests of Writing achievement test (WAT) (Raščevska & Paegle, 2011);
WISC-IV Full scale measurement (Wechsler, 2003; adaptation in Latvia Raščevska & Sebre, 2008).

Adapted or developed instruments – for listening comprehension, rapid automatized naming (RAN; Denckla & Rundel, 1974) and verbal short-term memory testing.
**Procedures**

- **Study 1:**
  The opinions of the experts will be collected and summarized using Delphi data collection method (Delphi method; Skulmoski & Hartman, 2007).

- **Study 2:**
  individual collection of data during several sessions with child at school.
Stages of data collection with Delphi method

1. On the basis of the theory and in cooperation with one of the experts, a questionnaire with the list of typical characteristics of RD in Latvian will be developed;

2. The questionnaire with the list will be sent to each expert and they will be asked to evaluate the characteristic as “Not typical at all”, “Almost not typical”, “Sometimes typical characteristic” or “Quite typical characteristic” as well as asked to provide, if it has to be measured as qualitative or quantitative;

3. The results will be summarized and sent to each expert to comment, argue and come to one joint list of characteristics.


Thank you!