



Foreign language attainment of children/ adolescents with poor literacy skills: a meta-analysis


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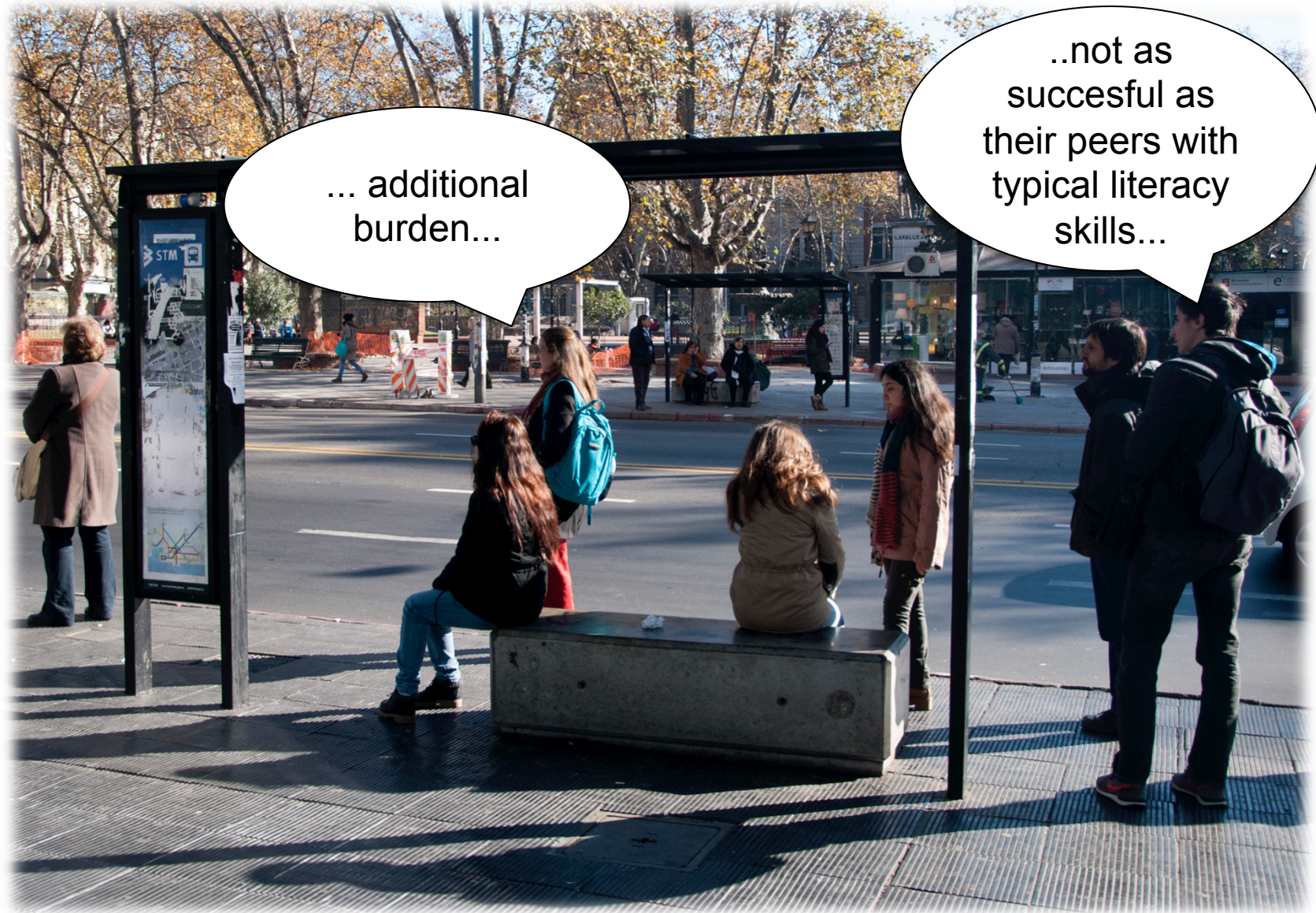
Do you think that children and adolescents should learn a foreign language at school?



.. communicate in increasingly multilingual societies ...

... increase employment possibilities in the future...

Do you think that children and adolescents with poor literacy skills should learn a foreign language at school?



Systematic literature review and meta-analysis



Rigorous methodology



Research question and eligibility criteria



Search strategy



Selection and data extraction

Risk of bias assessment



Data analysis



Interpretation and report





Foreign language attainment in children and adolescents with poor literacy skills: a systematic review protocol

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Foreign language attainment of children and adolescents with poor literacy skills: a systematic review protocol

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Citation

Alexa von Hagen, Saskia Kohnen, Nicole Stadie. Foreign language attainment of children and adolescents with poor literacy skills: a systematic review protocol. PROSPERO 2017 CRD42017069980 Available from: http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42017069980

Review question

How successful are children and adolescents with poor literacy skills in learning a foreign language, as compared to children and adolescents with average literacy skills?

Do participant characteristics (age of onset, age at assessment, linguistic background, profile of native language difficulties, language pairing between native and foreign language), foreign language outcome measures (type of foreign language subskills) and instruction type (frequency and duration) moderate the success of children and adolescents with poor literacy skills experience in learning a foreign language, as compared to their peers with average literacy skills?

Searches



Research question

How successful are children and adolescents with poor literacy skills in learning a foreign language, as compared to children and adolescents with average literacy skills?

Population **I**ntervention **C**omparison **O**utcome





Research question

Do

participant
characteristics



- age of onset
- age at assessment
- linguistic background
- profile of native language difficulties
- language pairing between native and foreign language

instructional
characteristics

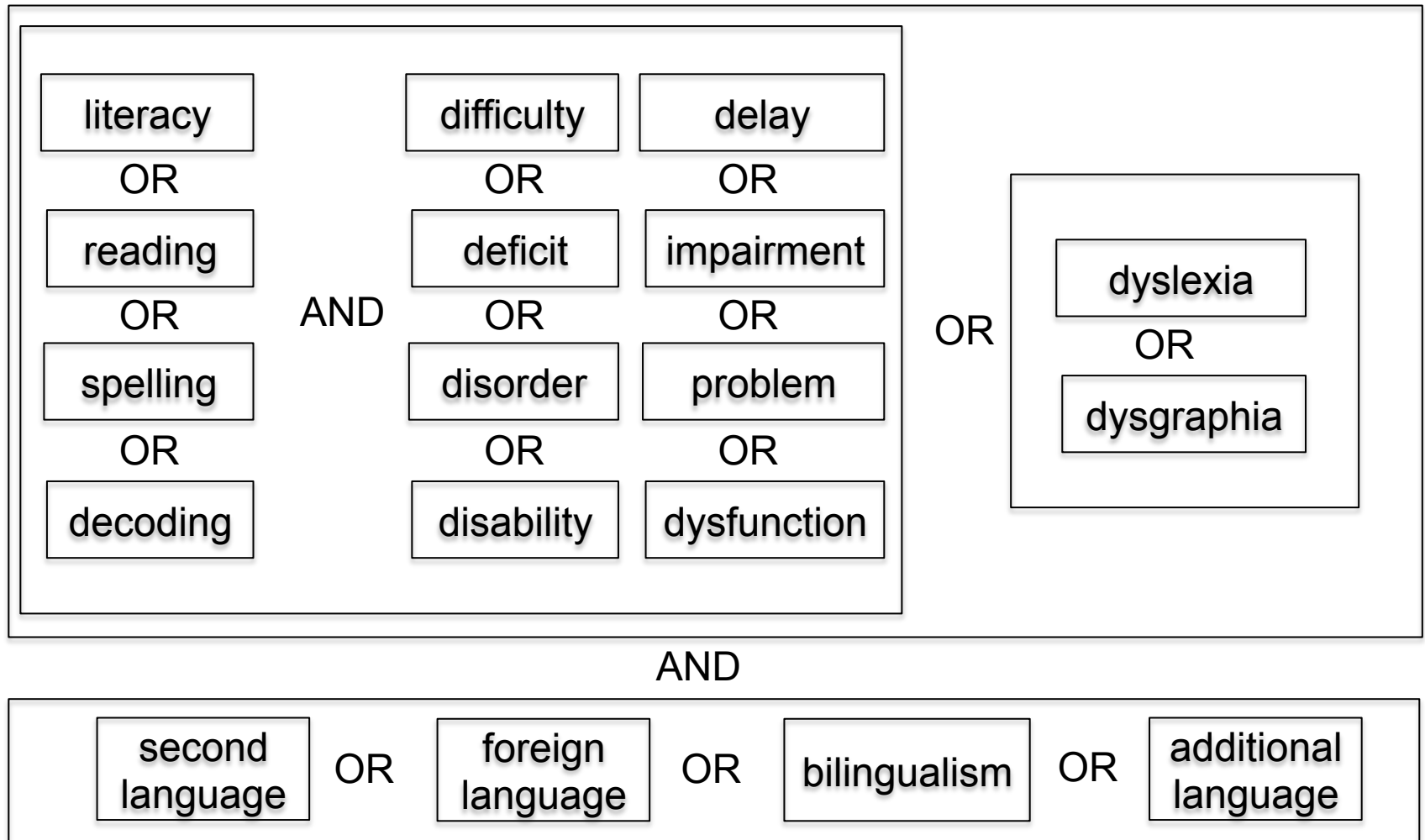


- frequency
- duration

.... moderate the success of children and adolescents with poor literacy skills in learning a foreign language, as compared to their peers with average literacy skills?



Search strategy





Search strategy

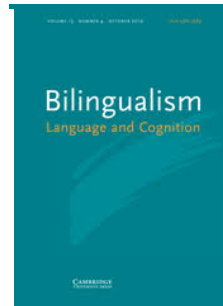


ProQuest

Linguistics and Language Behavior Abstracts (LLBA)

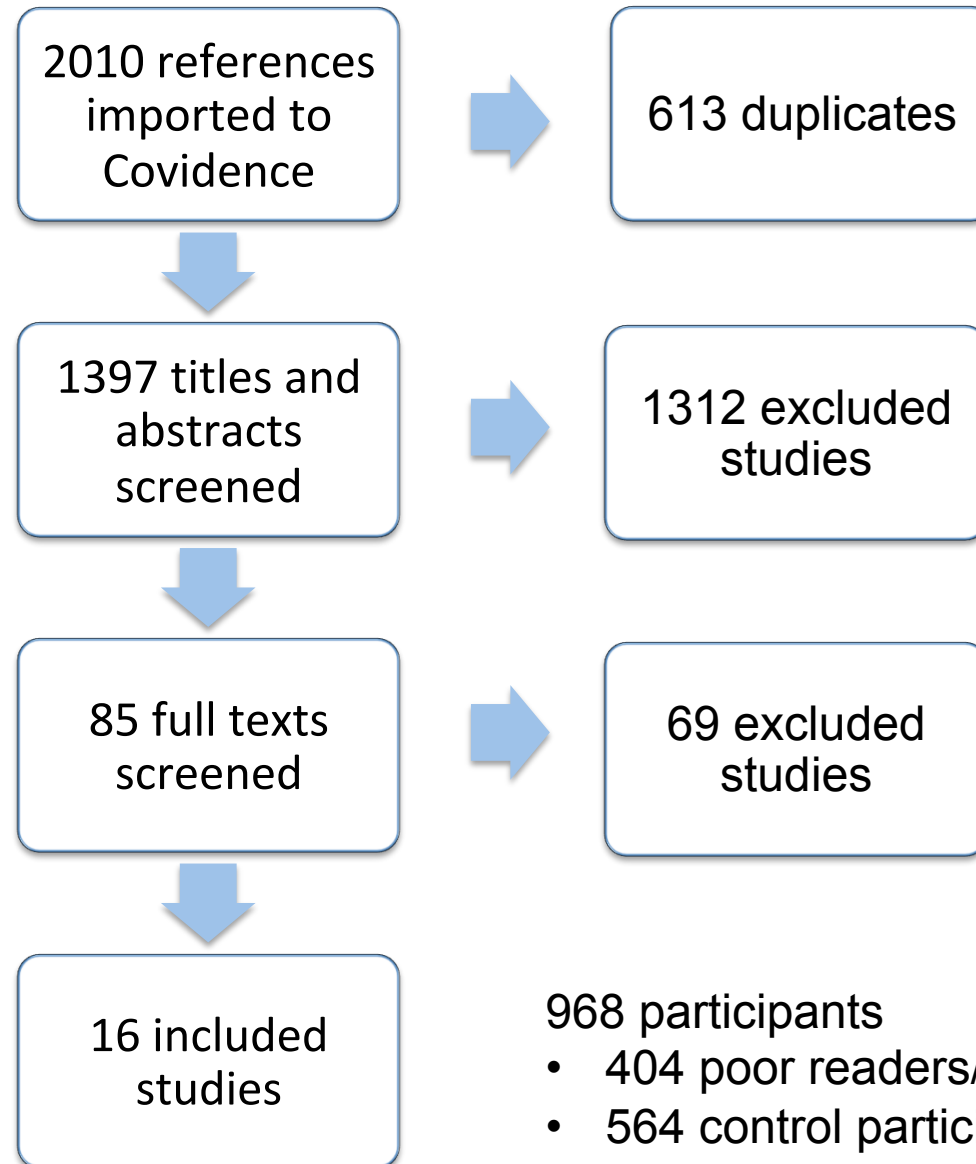
ProQuest

ERIC





Selection and data extraction





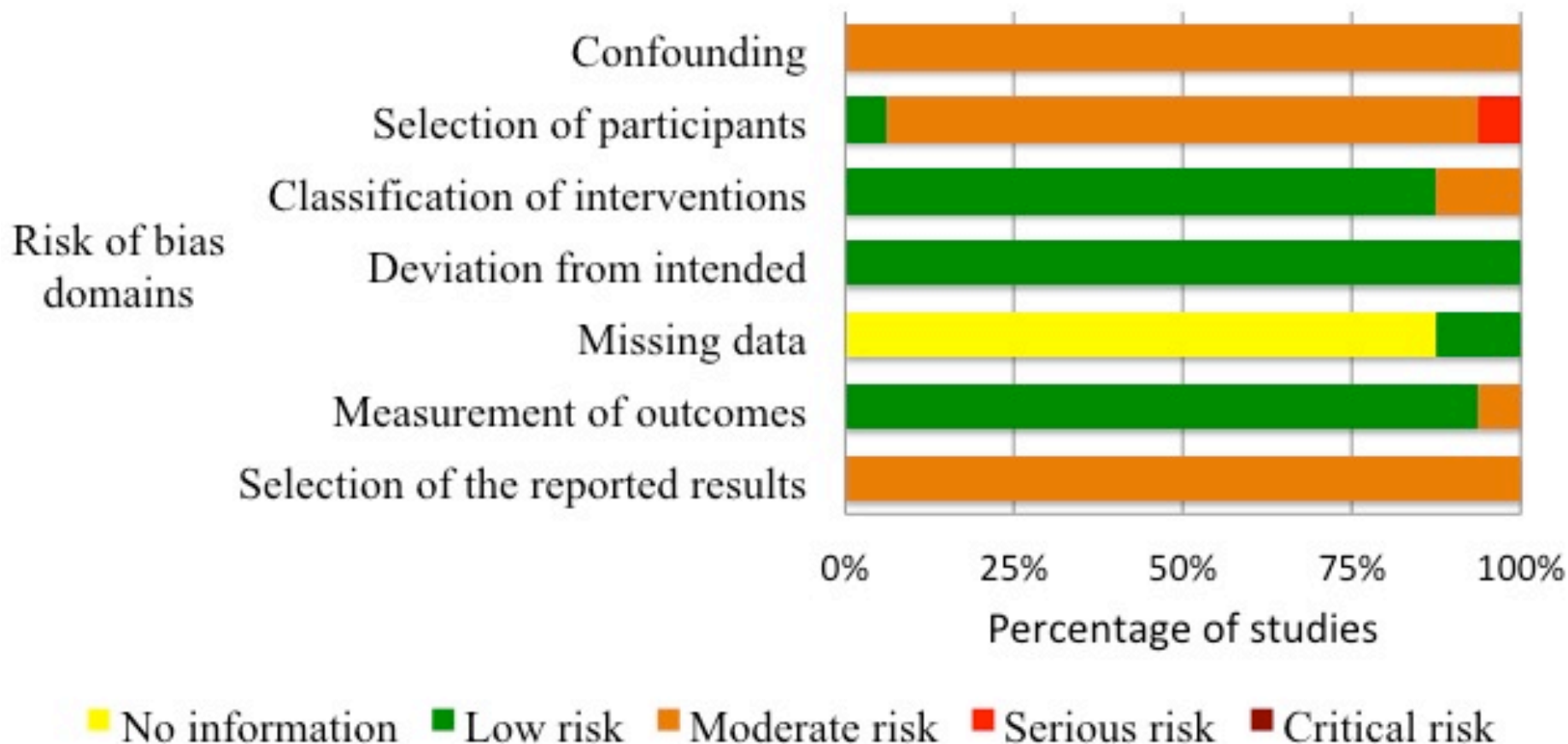
Risk of bias assessment

ROBINS I scale (Sterne et al., 2016)





Risk of bias assessment





Selection and data extraction

Native language

Foreign language



Dutch



Norwegian



Italian



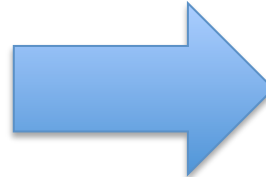
Polish



Cantonese



Mandarin



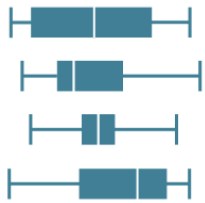
English





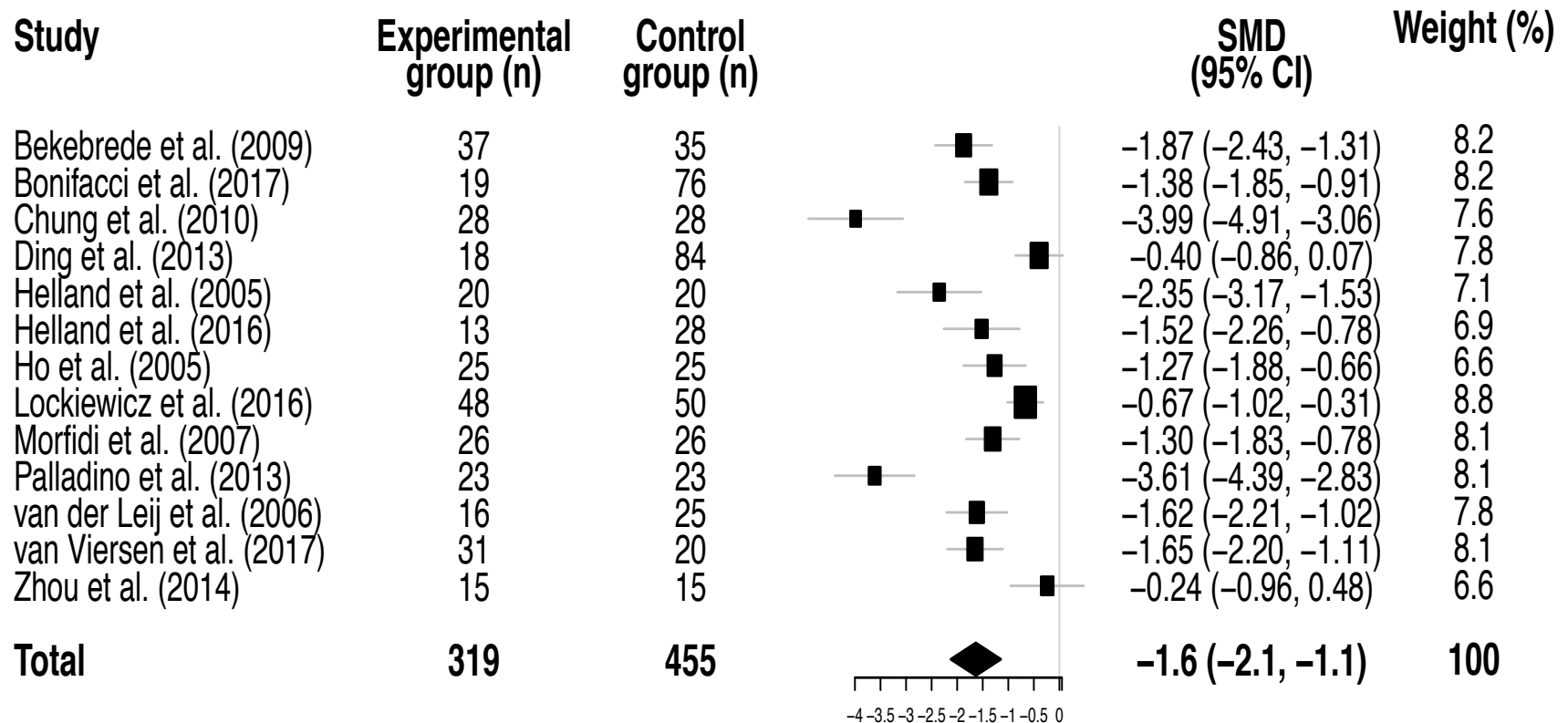
Selection and data extraction

- ~~Discrimination of speech sounds~~
- ~~Production of speech sounds~~
- **Spoken word comprehension**
- **Spoken word production**
- ~~Sentence comprehension~~
- ~~Sentence production~~
- **Phonological awareness**
- **Letter knowledge**
- **Word reading**
- **Nonword reading**
- **Orthographic knowledge**
- **Reading comprehension**
- **Spelling**
- **Translation**



Data analysis

Foreign language word reading



Heterogeneity SMD: $Q = 114.33$, $df = 12$, $p < .001$; $\tau^2 = 0.72$; $I^2 = 89.50\%$



Interpretation of results

- Spoken word comprehension
- Spoken word production
- Phonological awareness
- Letter knowledge
- ~~Word reading~~
- ~~Nonword reading~~
- ~~Orthographic knowledge~~
- Reading comprehension
- ~~Spelling~~
- ~~Translation~~

**Significant
between study
heterogeneity**



Moderator analyses

Do

participant
characteristics



- **age of onset**
- **age at assessment**
- linguistic background
- profile of native language difficulties
- **language pairing between native and foreign language**

instruction
type



- frequency
- duration

.... moderate the success of children and adolescents with poor literacy skills in learning a foreign language, as compared to their peers with average literacy skills?



Interpretation of results

- Spoken word comprehension
- Spoken word production
- Phonological awareness
- Letter knowledge
- ~~Word reading~~
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**Significant
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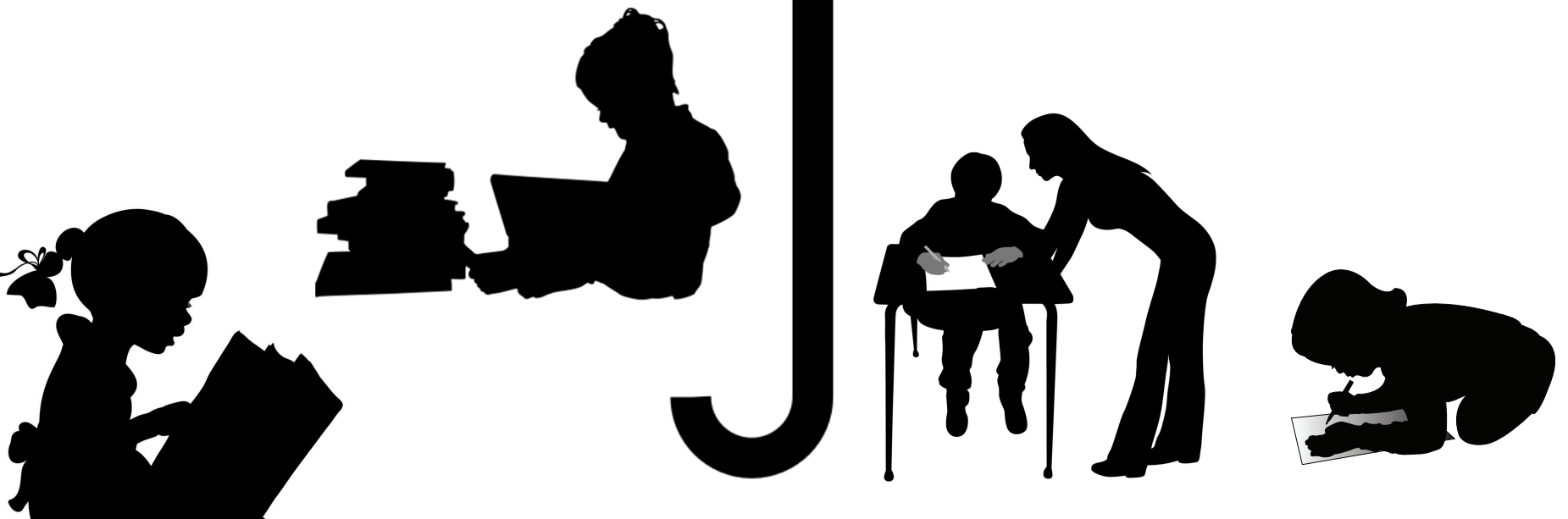


Interpretation of results

Outcome variable	<i>SMD</i>	<i>n</i> of studies
Spoken word comprehension	-0.47 ^{ns}	5
Spoken word production	-1.10*	4
Phonological awareness	-1.10*	4
Letter knowledge	-1.23*	2
Reading comprehension	-1.00*	2

Problems with meta-analyses solely based on *SMD*

Heterogeneity of
children and
adolescentes with
poor literacy skills





Interpretation of results

Coefficient of variation (*CVR*) = natural logarithm of the ratio between the coefficients of variation of both participant groups
(Nakagawa et al., 2015)

Outcome variable	<i>SMD</i>	<i>CVR</i>
Spoken word comprehension	-0.47 ^{ns}	Significant between study heterogeneity
Spoken word production	-1.10*	Significant between study heterogeneity
Phonological awareness	-1.10*	-0.38*
Letter knowledge	-1.23*	Significant between study heterogeneity
Reading comprehension	-1.00*	-0.23 ^{ns}



Summary of results

- Foreign language attainment of children/adolescentes with poor literacy skills is highly variable
- Insufficient evidence to undertand the sources of this variability
- Available evidence is limited to
 - native speakers of Dutch, Norwegian, Italian, Polish, Mandarin and Cantonese learning English as a foreign language
 - foreign language spoken word comprehension and production, phonological awareness, letter knowledge and reading comprehension
 - 2 to 5 study reports for each foreign language outcome measure

Do you think that children and adolescents with poor literacy skills should learn a foreign language at school?



[illegible]



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Access my PhD thesis here

