Socioeconomic status and oral language skills in children: A systematic review

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Childrens Language skills

Oral language/language comprehension

Phonology

Grammar

- Vocabulary
- Pragamatics
- Morphology
- Narrative understanding
- Pragmatics
Oral language skills

Fundamental for social interaction and societal participation

Fundamental for reading comprehension, at later ages the two actually close to isomorphic constructs

Seen as fundamental in humans, therefore included in most intelligense tests as crystallised intelligence
Socio-economic factors

- Socioeconomic factors, such as parental income, educational level, or home environment appear to be related to variation in children’s oral language skills (e.g. Pace, Luo, Hirsh-Pasek & Golinkoff, 2016; Sirin, 2005).

- However; previous studies disagree about the strength of the relation and the factors that moderate it (Sirin, 2005; White, 1982).
METHOD

- **Inclusion criteria:**
  - Studies reporting on concurrent data.
  - Studies including children in the age range 4 to 12.
  - Studies including L1 or L2 learners.
  - Studies published after 2000.
  - Studies reporting on:
    - *SES* (a socioeconomic variable, a measure of home environment or SES-scale)
    - *Oral language* (vocabulary, grammar, narrative skills, listening comprehension or composites).
    - *Pearsons r* correlation

- **Exclusion criteria:**
  - Clinical or selected samples
RESULTS

• Search in four databases, reference list, previous reviews
• 3279 references from electronic search.
• 91 studies met the eligibility criteria
• 148 correlations were extracted
Low socioeconomic status families, whose primary language was either Hmong or Spanish.

SES (Free/Reduced lunch status)

Parent reading interest

SEIFA disadvantage index

Combined

Thirty middle SES and 30 low SES children

Middle class

Combined

NMAE occupation scores (Hollingshead scale)

Combined

Preschool Cumulative risk index (single parent, maternal education

Parental education

Mainstream american english

Low-income Head start

Diverse (L1 and L2)

Combined

Family literacy (include: artifacts used for literacy, shared reading,

Skills

T2: Home Literacy Environment about reading behaviour

NICHD study

Head Start students

HLE (Frequency of reading).

Low income

Combined

Comparison

Low and middle SES

Home literacy environment (materials available at home

Combined

Combined

Socioeconomic status

Combined

Square

Combined

Combined

National Early Head Start (EHS) study

BUT:

Large variation in results between studies

Q (82) = 90.96, p < 0.001

I square 90.96
What can explain this variation between studies?
✓ Significant difference between different language measures

Broader individually administered measures tend to give higher correlations, $r = 0.31$ [0.23, 0.39] $Q(6) = 40.43$, $p = 0.0001$ than more narrow measures
✓ Significant differences between type of SES measures

Home language environment \( r = 0.33 \) (0.20, 0.45)
Mothers education \( r = 0.36 \) (0.34, 0.38)

Gives higher correlations than SES composites, fathers education, income and frequency of book reading

\[ Q(6) = 42.12, \ p = 0.0001 \]
✓ Significant differences between studies with samples of different SES levels

Only low SES \( r = 0.22 \ [0.17, 0.27] \ k = 15 \)
Full range SES \( r = 0.28 \ [0.24, 0.31] \ k = 67 \)

\( Q(1) = 8.69, \ p = 0.01 \)
✓ No significant difference between US studies, European studies and other studies

US/Canada = 0.26 (0.22, 0.29) k = 56
European = 0.22 (0.06, 0.37) k = 13
Other = 0.30 (0.22, 0.38) k = 13

Q(2) = 1.12, p = 0.57
Discussion

- Challenging to disentangle the construct socio-economic status and the various operationalizations.
- Majority are based on crude self reports or register data.
- More common to measure proxy variables like income or education, and not home environment variables such as reading habits etc.
- Few studies report reliability and control for measurement error/use latent variables.
- Measure socio economic variables at only at one point in time
- Few studies use for instance mediation models to examine mechanisms
Correlation/causation

Education → Home environment → Children's oral language skills
Heritability explains around 50% of the variation between children on average.

In addition «the nature of nurture», correlation between genes and environment (see Sauce & Matzel, 2018)

Puglisi, Hulme et al 2018
Heritability can explain a large amount of variation between children on a trait. But the average differences between groups – ethnic groups, gender – could be entirely environmental; For example, as a result of discrimination, poverty (e.g. Height).

E.g. In US for higher SES children a large amount of variation in language skills/school achievement is explained by heritability. This is not the case in lower SES children. This interaction is not found in UK or Australia (Tucker-Drob & Bates, 2016).
Too few studies have controlled for parental skills in the relationship between socio economic background, home environment and children's language skills.

Often led to naive accounts about environmental effects (e.g. from parental reading or school quality) on individual children's language skills (and learning in general).
Still, heritable does not mean unalterable

1. Move distribution

2. Reduce variation
But...

Difficult

-to both improve the mean and reduce varition at the same time

-to get lasting effects from interventions
The more equal opportunities a society is able to give, the more of the observed differences is down to genetic factors.
Thank you for the attention!