Relations between Process Quality and Children's Math Skills in Early Child Care (KIEL-Study)
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Introduction


In Germany, it is now the norm for children under three years to spend time outside the home in early childhood education and care (ECEC). Due to heterogeneous findings and few results in this area, further research is still needed. In cooperation with the University of Jyväskyla the current study intends to adapt the design of VUOKKO, an ongoing Finnish study, to ensure a comparability for further research projects.

Research question

How does teacher-child interaction quality correlate with mathematical skills of two-to three-year old children?

Hypotheses

H1: Higher interaction quality has positive effects on children's mathematical outcomes.

H2: Thresholds of quality must be met to impact children's mathematical outcomes.

Design

Sample

- 22 to 36 month olds (n=70) from child care centers (n=10) located in Potsdam and surrounding area
- Preschool teachers from child care centers (n=10)
- Parents from children in child care centers (n=70)

Analysis

- Correlation Analysis (evidence of a statistically significant link between variables)
- Hierarchical Linear Model

Constructs & Instruments

- Classroom observation (videotaped)
- Questionnaires
- Children’s individual assessment

Process quality, context factors & home learning environment (HLE)

Mathematical outcomes

Discussion

- underrepresentation of individual child characteristics: How could individual child factors moderate the influence of process quality?
- variety of sample: slightly higher socioeconomic status than expected in the broader population

- opposite way of influence: children with better math skills and higher HLE-score experience better interaction > higher interaction quality
- examination of child development in cross-sectional design not possible
- instruments of measurement of math skills may be insufficient

References


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