A randomized controlled trial to examine the effect of two teaching methods on preschool children’s language and communication, executive functions, socioemotional comprehension, and early math skills

# Details

## Year

2019

## DOI

10.1186/s40359-019-0325-9

## Issued

2019

## Language

English

## Volume

7

## Issue

1

## Authors

Gerholm T.;Kallioinen P.;Tonér S.;Frankenberg S.;Kjällander S.;Palmer A.;Lenz-Taguchi H.

## Type

Journal article

## Journal

BMC Psychology

## Publisher

Springer Science and Business Media LLC

## Topics

## Sample

18 preschools and 29 preschool units with a total of 431 children and 98 teachers in Sweden.

## Implications For Educators About

## Implications For Stakeholders About

Researchers

# Abstract

Background
During the preschool years, children’s development of skills like language and communication, executive functions, and socioemotional comprehension undergo dramatic development. Still, our knowledge of how these skills are enhanced is limited. The preschool contexts constitute a well-suited arena for investigating these skills and hold the potential for giving children an equal opportunity preparing for the school years to come. The present study compared two pedagogical methods in the Swedish preschool context as to their effect on language and communication, executive functions, socioemotional comprehension, and early math. The study targeted children in the age span four-to-six-year-old, with an additional focus on these children’s backgrounds in terms of socioeconomic status, age, gender, number of languages, time spent at preschool, and preschool start. An additional goal of the study was to add to prior research by aiming at disentangling the relationship between the investigated variables.

Method
The study constitutes a randomized controlled trial including 18 preschools and 29 preschool units, with a total of 431 children, and 98 teachers. The interventions lasted for 6 weeks, preceded by pre-testing and followed by post-testing of the children. Randomization was conducted on the level of preschool unit, to either of the two interventions or to control. The interventions consisted of a socioemotional and material learning paradigm (SEMLA) and a digitally implemented attention and math training paradigm (DIL). The preschools were further evaluated with ECERS-3. The main analysis was a series of univariate mixed regression models, where the nested structure of individuals, preschool units and preschools were modeled using random variables.

Results
The result of the intervention shows that neither of the two intervention paradigms had measurable effects on the targeted skills. However, there were results as to the follow-up questions, such as executive functions predicting all other variables (language and communication, socioemotional comprehension, and math). Background variables were related to each other in patterns congruent with earlier findings, such as socioeconomic status predicting outcome measures across the board. The results are discussed in relation to intervention fidelity, length of intervention, preschool quality, and the impact of background variables on children’s developmental trajectories and life prospects.

# Outcome

"[N]either of the two intervention paradigms had measurable effects on the targeted skills. However, there were results as to the follow-up questions, such as executive functions predicting all other variables (language and communication, socioemotional comprehension, and math)." (Authors, in Abstract)