### Introduction

The literature comparing conventional and Montessori student outcomes is expanding. However, there is a paucity of research comparing conventional and Montessori teachers that could potentially influence student outcomes.

### Research Questions

- What is the relation between openness, pedagogy, and teacher beliefs?
- According to teachers, did teacher certification training shape their beliefs? If so, in what way?

### References


### Mediation Structural Equation Model

**E.g., Openness Items:**
- Is curious about many different things
- Is inventive
- Values artistic, aesthetic experiences

**E.g., Teacher Belief Items:**
- Teacher-oriented: Using whole-group instruction
- Student-oriented: Allowing students to choose from a variety of activities

On average, Montessori teachers rated themselves as significantly more open and student-oriented relative to conventional teacher self-ratings.

Most agreed that teacher training shifted their beliefs. This was particularly true among Montessori teachers.

Conventional and Montessori teachers mentioned shifts in beliefs about student-oriented education, teaching practices, how children learn, and child development at similar rates but in different ways. Student-oriented education, for example:

- **Conventional Teachers:**
  - "Understand and identify milestones and reasonable expectations for the different age groups."
  - "Respecting family and cultural differences."
- **Montessori Teachers:**
  - "The amount of independence that young children can have is much higher than I thought."
  - "Respect the developing child."

### Methods

**Participants**
- 360 teachers: 188 Conventional and 172 Montessori

**Survey**
- Anonymous Qualtrics survey
- Measures: Big Five Inventory (John et al., 1991, 2008)
- Qualitative questions: Did teacher certification training shift your beliefs about: children and how they learn? teaching practices? how you view yourself or the world? If so, in what way?

**Quantitative Analysis**
- Factor analysis of personality traits and teacher beliefs
- Mediation structural equation model estimated with robust maximum likelihood and weighted least squares estimators
- Post-hoc power analysis using Monte Carlo simulation with 500 replications

**Qualitative Analysis**
- Teacher responses divided into substantive phrases
- First and second author coded each phrase based on topic and like topics were grouped into themes
- Third coder for calculating inter-rater reliability ($k=.84$)

### Conclusion

This evidence suggests that there are significant differences between conventional and Montessori teachers in terms of openness and teacher beliefs. These results warrant further investigation into the mechanisms that shape conventional and Montessori teacher beliefs, and the relation between teacher beliefs, implementation fidelity, and student outcomes.