Purpose of MyTeachingPartner

- Research-Based, Developmentally Appropriate Curricula that:
  - Exposes at-risk students to Math and Science concepts critical for future academic success
  - Explicitly targets key constructs with a balance of teacher-guided experiences and meaningful child-driven interactions.

- Professional Development that:
  - Focuses on improving the quality of teachers' interactions with children
  - Is embedded in the curriculum, with emphasis on high quality/fidelity implementation

Research Questions

1. Is there preliminary evidence of an effect of the MTP-MS curricula on children's math & science skills?
2. For the intervention group, is there a relationship between quality, fidelity, and dosage of the curriculum, and child outcomes?

Method

Participants

- 10 pre-k classrooms (8 MTP – MS treatment, 2 “business as usual” control) and 80 children (8 randomly selected children per classroom)
- Children (female = 60%), 4.04 – 5.08 years old (M = 4.55, SD = 12.59)
- Teachers (females = 100%), 24 – 28 years old (M = 41.4, SD = 12.93)

Curricula

- 9 months of 20-minute activities (2 math and 2 science per week)
- Whole group, small group, and center time activities

Teacher Supports

- Make it Work adaptations and Extensions for every activity
- Center Time Adaptations: Individualized exploration & discussion

Procedures

- Full year pilot test of Math and Science curricula
- Pre- and post-assessments of children’s math knowledge and skills
- Post-test assessments of children’s science skills
- Videotaped observation of activities for treatment group, with quality, fidelity, and dosage assessed

Measures

- Children’s Math Skills
  - Number sense and operations assessed using TEMA-3 (Ginsburg & Baroody, 1983)
  - Geometry and measurement skills assessed using a derivative of the EMA-G (Clements & Sarama, 2008)
  - Number sense and operations assessed using TEMA-3 (Ginsburg & Baroody, 1983)

- Children’s Science Skills
  - Life Science and Earth & Physical Science skills assessed with project-developed measures

- Teacher Fidelity & Dosage
  - Fidelity measure developed to determine if curricula were implemented as intended
  - Dosage measured by count of activities implemented

Results

Pre-Post Comparison (Math)

- TEMA-3.
  - Children in both groups made significant growth across the year (p < .001).
  - There was some evidence that children in the treatment group made greater gains compared to children in the control group (p = .080).
- EMA-G Derivative.
  - Children in the treatment group (p < .001), but not the control group, made significant gains across the year.
  - The treatment group, compared with the control group, made greater gains across the year (p = .027).
- ARS – Math (Treatment group only). Children in the treatment group made significant gains across the year (p < .001).

Post-Only Comparison (Science)

- Earth & Physical Science.
  - Children in the treatment group scored higher than the control group (p = .038).
  - Life Science. Group differences approached significance (p = .061) with the treatment group scoring higher than the control group.

Impact of Quality, Fidelity, & Dosage

- Fidelity predicted significant gains on TEMA (p = .009).
- Dosage approached significance in predicting gains on EMA-G derivative (p = .056).

Teacher’s Perceptions of MTP

- Over 70% of teachers strongly agreed that MTP activities were a valuable addition to their teaching practice

Conclusions/Future Directions

- Children in the treatment group made greater gains in geometry and measurement across the preschool year.
- Children in the treatment group scored higher on end-of-year Earth & Physical Science measure.
- Curriculum fidelity and dosage are associated with children’s math skills
- Teachers generally had positive feedback about the MTP curriculum.
- Year 3: Final curricular revisions completed; Full set of Web-based Teacher Supports provided; Field trial in 35 classrooms