



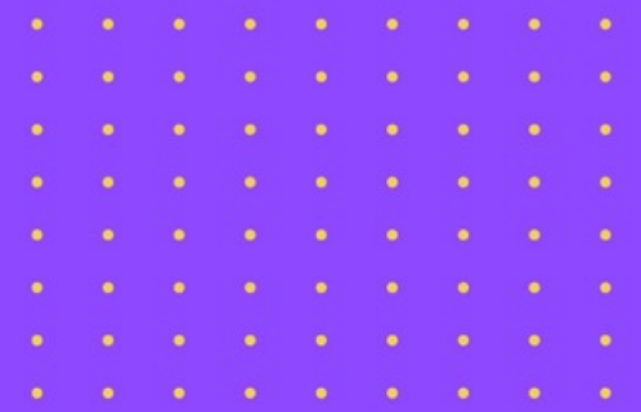
J A D E N K Ä

Intercultural Bilingual Preschool Mathematics



J A D E N K Ä

What is mathematics skills?



J A D E N K Ä





J A D E N K Ä

- + Bilingual preschool mathematics
- + Intercultural mathematics



Evaluation Design

RCT 3 groups



Bilingual
Preschool Math



124
Schools



124
Schools



Intercultural
Bilingual
Preschool Math



125
Schools



Traditional
Preschool Math

Control Group

INSTRUMENTS



**Standardized
learning test**



**Teacher
questionnaire**



**Director
Questionnaire**



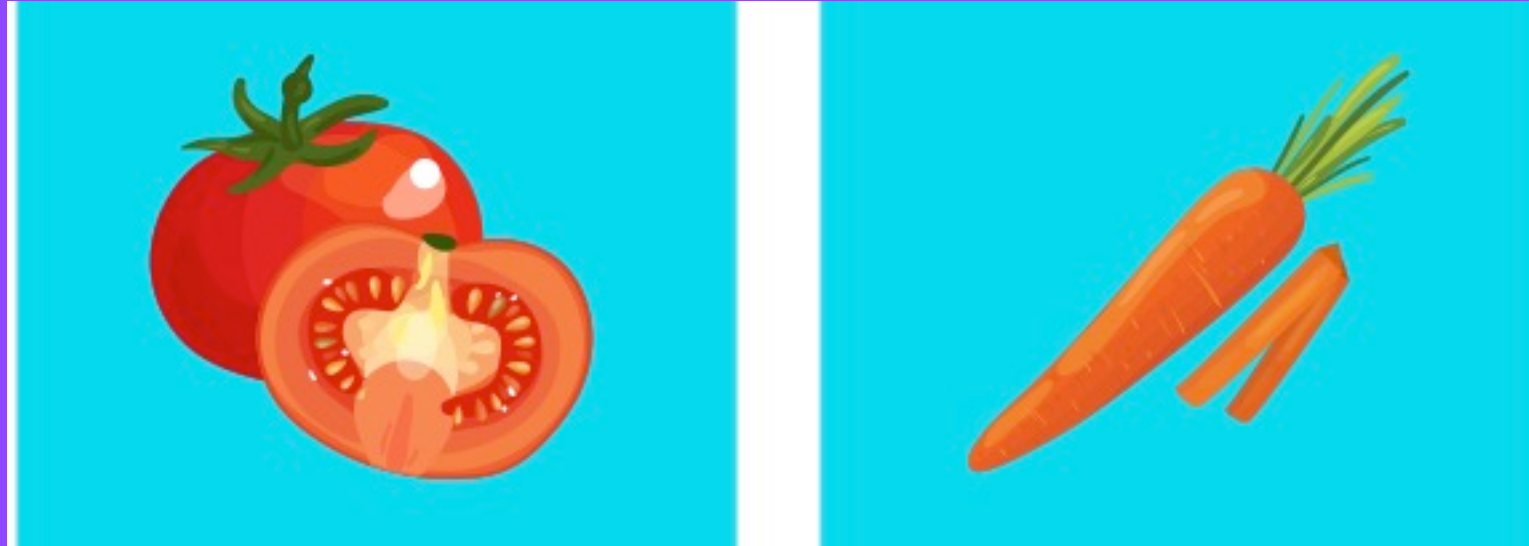
**Parent
Questionnaire**

Standardized Learning Test

- ✦ **Preschool EGMA**
- ✦ **Preschool EGRA**
- ✦ **Math anxiety**
- ✦ **Ethnomathematics skills**
- ✦ **Cultural values**
- ✦ **Oral comprehension
Ngabere**
- ✦ **Math perceptions**



Ethnomathematics Learning Test



Use your fingers to point at the round thing (Kwati)

¿Jänträn bä ta miani nete, meden taenta ne kwrere: kwati?



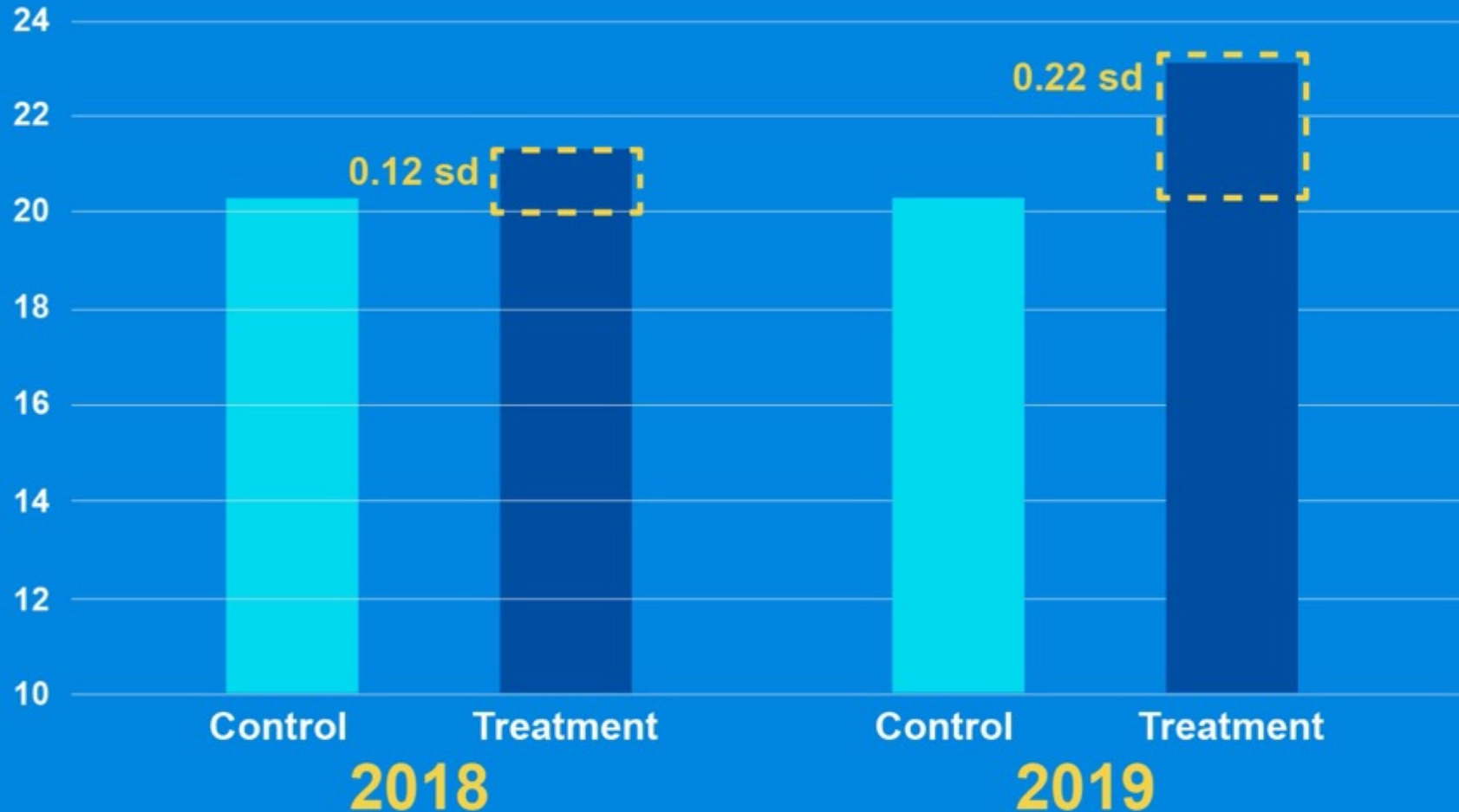


R·E·S·U·L·T·S

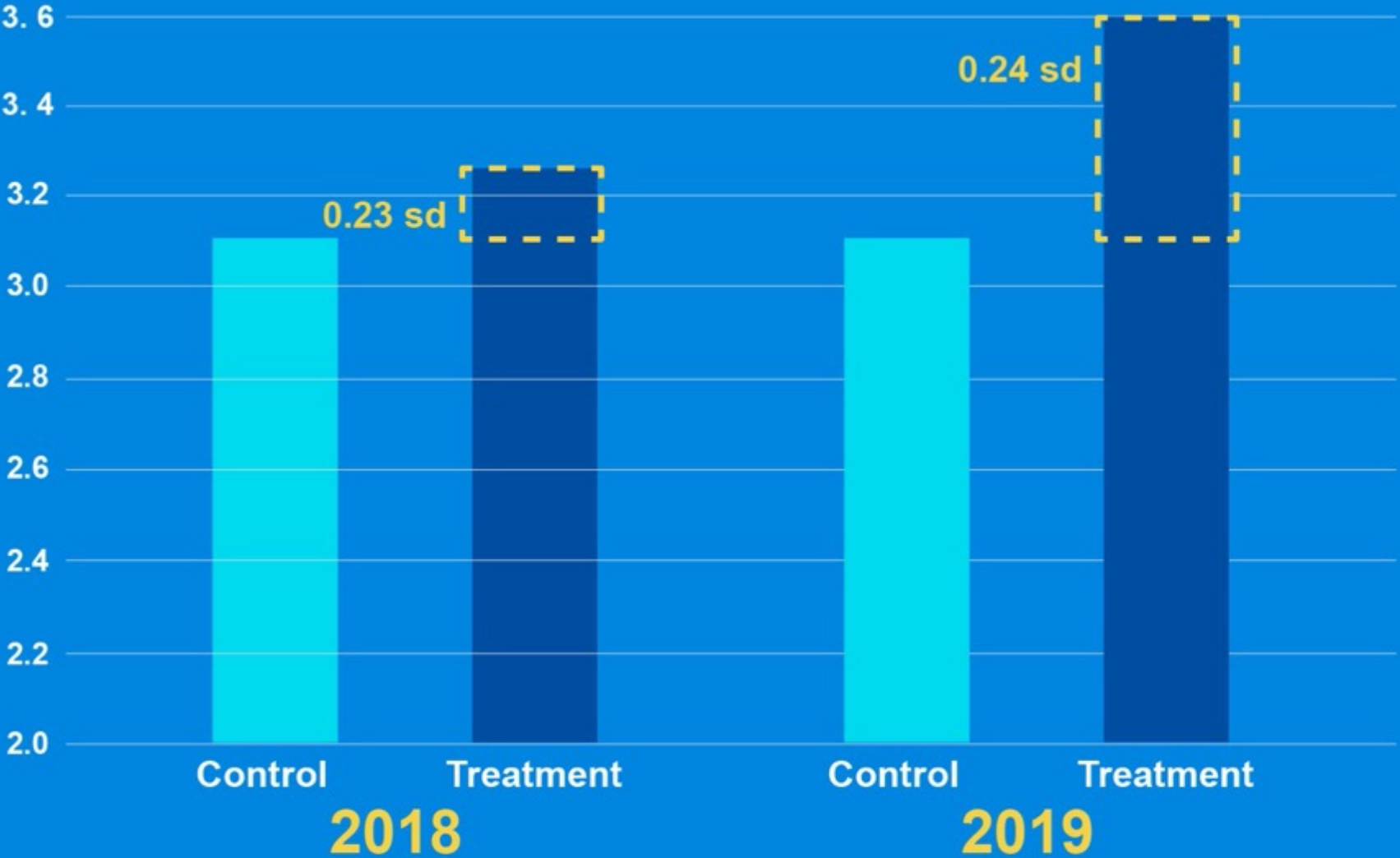
2018 & 2019



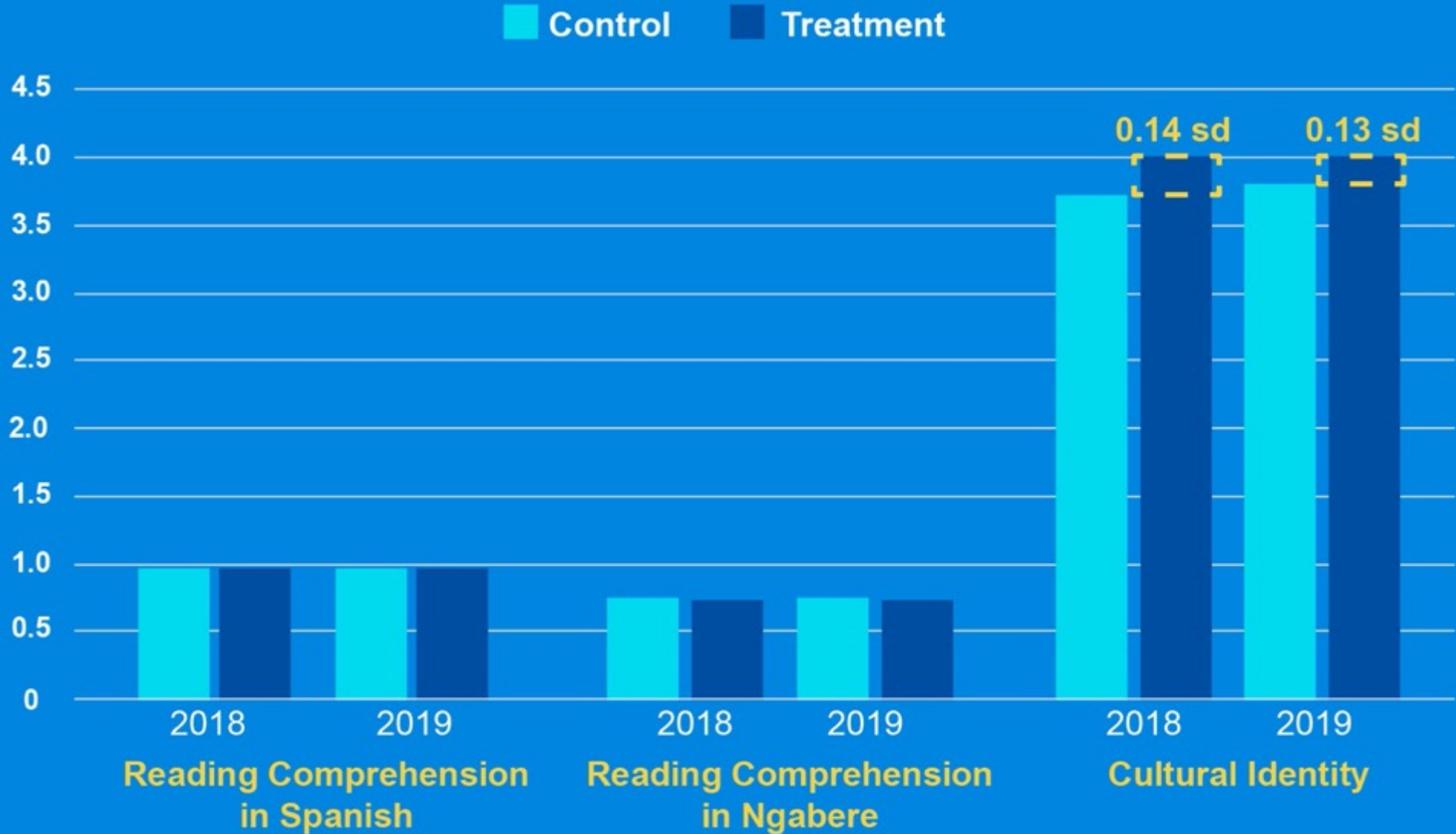
JADENKÄ Improves Western Math Skills



JADENKÄ Improves Ethnomathematics Skills



Other Results



Qualitative Findings

Advantages:

- * Students and teachers clearly have fun and are engaged
- * Pedagogy is delivered as intended
- * Classes are consistently implemented by teachers of different skill level
- * Greater Parental involvement

Remaining challenges:

- * The pace of the curriculum may be too fast
- * The pronunciation of the ngabere language is difficult

C O N C L U S I O N



JADENKÄ increases children's skills in Western math and ethnomathematics.



JADENKÄ increases students' knowledge of the Ngabere culture.



JADENKÄ increases teachers' knowledge of the Ngabere and ethnomathematics.

Thank You!

