THE RURAL SCHOOL AND COMMUNITY TRUST

Rural School Innovations Webinar Series

The 3-to-3rd Project

Created by STAR School

Flagstaff, AZ

Wednesday, February 13, 2013
2:00 PM EST

Welcome

Opening Remarks:

Robert Mahaffey, Director, Communications, Rural School and Community Trust

Dr. Doris Terry Williams, Executive Director, Rural School and Community Trust

Presenters:

Dr. Mark Sorensen, Director/Co-founder, The STAR School, Flagstaff, AZ

Dr. Derek Price, Associate Professor, Wheaton College, Norton, MA

About The STAR School

The STAR School is:

- Remotely rural: The entire school is off-grid, powered by solar and wind power;

- Native American: 98% of our students are Navajo, Hopi or Apache;

- Predominantly poor: 82% free and reduced lunch rate;

- Dedicated to: High levels of cognitive stimulation and culturally rooted values.

Early Math Skills Are Critical …

.... especially for low socioeconomic status (SES), minority or underserved students.

"The most powerful predictor of later school math and reading success is the child's math skills upon school entry. (Duncan et al, 2006)

"Children from low-income backgrounds enter school with much less mathematical knowledge than their more affluent peers." (Siegler, 2009)

"Children who fall behind early in math generally stay behind" (Siegler, 2009)

Mathematics Education in a Cultural Context

Two of the strongest predictors of resilient math outcomes for low SES students are:

- Supportive community school model;

- Early sense of competence in math*

STAR School's school-wide culture emphasizes:

- Respect, Relationship, Responsibility, and Reasoning (based on Navajo cultural values)

- Rich math environment from age 3 to grade 3

*Borman & Overman, 2004

Enhancing Early Math Development

- Provide a safe and nurturing environment that allows choice;

- Notice and discuss numbers, shape, and other math elements with children;

- Create an exploratory environment with a wide array of objects;

- Provide a guided focus on specific aspects of math.

The STAR 3-to-3rd Math Project

- Modified Montessori model fits with our community values;

- High quality math materials;

- Sustaining Navajo cultural values (4R's);

- Language rich environment;
(English, Navajo, Sign)

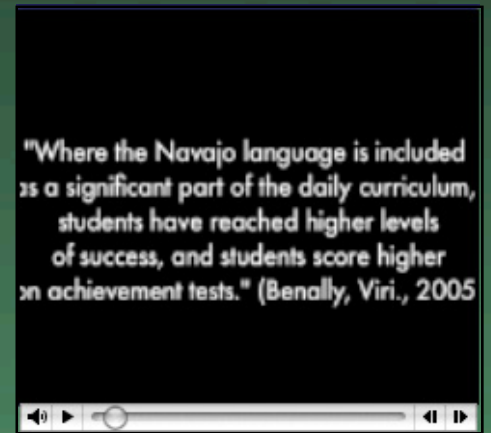- Enhancing children's executive functioning (self-regulation)

High Levels of Math Language

- Counting, comparing, estimating and recognizing number symbols, including number lines;

- Measuring and comparing amount: volume, weight, length, height, distance, and area;

- Classifying, seriating, and patterning;

- Geometry and spatial positions/relationships;

Video clip 8a

"Where the Navajo language is included as a significant part of the daily curriculum, students have reached higher levels of success, and students score higher on achievement tests." (Benally, Viri., 2005

Video clip 8b

Video clip 8c

High Levels of Math Language

- Spatial positions/relationships: "Who is up high, James? What will happen when you come down?"

- Measuring and comparing amounts: "Jennifer, how will you know that everybody gets an equal share of that apple?"

Video clip 9a

- Classifying, seriating, and patterning: "How should we arrange the things we found on our walk, Jude?"

Video clip 9b

Positive Emotional Climate

- Classroom dedication to a school-wide social compact; teachers cite elements of the school compact;

- Combine P and K classroom; facilitates internalization of school-wide social values;

Video clip 10a

- Emphasize children's relationships to others in school;

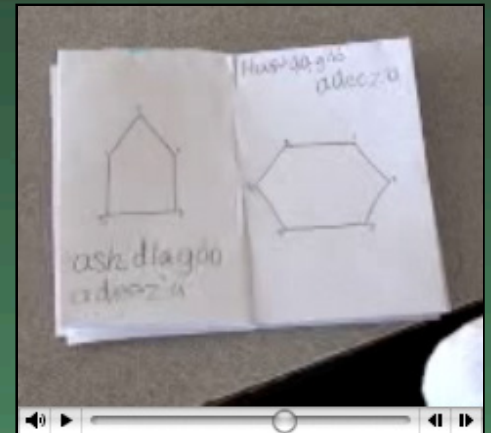- Recruit older students to serve as learning buddies, etc.

Video clip 10b

Enhancing Self-Regulation and Resilience Through Math Learning

Video clip 11a

- Whole child approach benefits math development; the whole child includes the child's culture(s);

Video clip 11b

- Adopt campus-wide definition of the whole child; STAR adopts "40 assets," including social-emotional assets; social-emotional assets also serve to shield students from adversities;

Video clip 11c

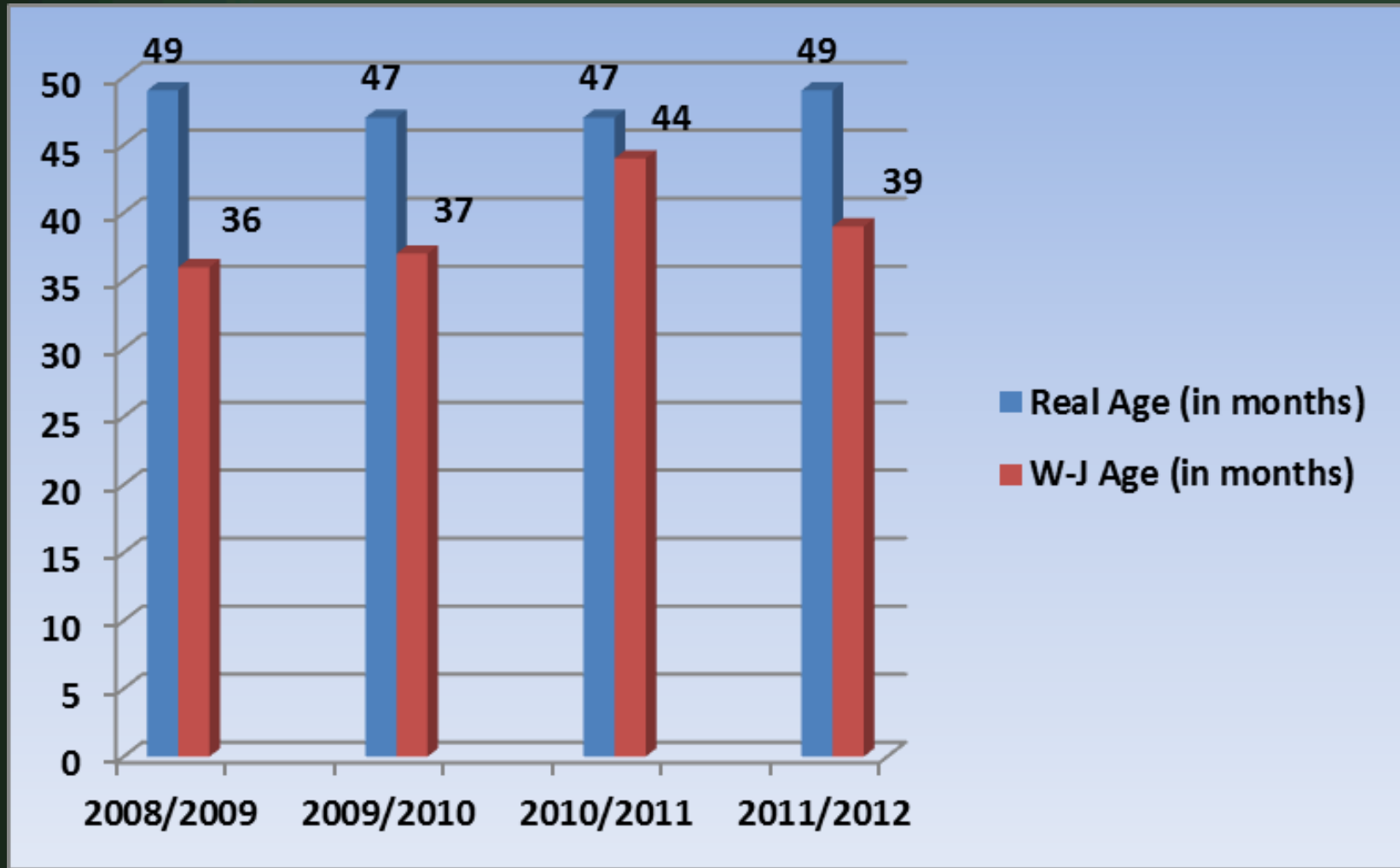- Students' math resilience may improve; assets yield self-regulation and commitment to learning.

NOTE: W-J Age is a child's age-equivalent score on subscales A and B of the Woodcock-Johnson III assessment of mathematics development. The number of students included in each cohort ranges from 17 to 19, and includes only those students who were in the preschool program for the entire 10 months of the school year.

Spring Average Woodcock-Johnson (W-J) Math Scores for STAR Preschool Students (4 Cohorts)
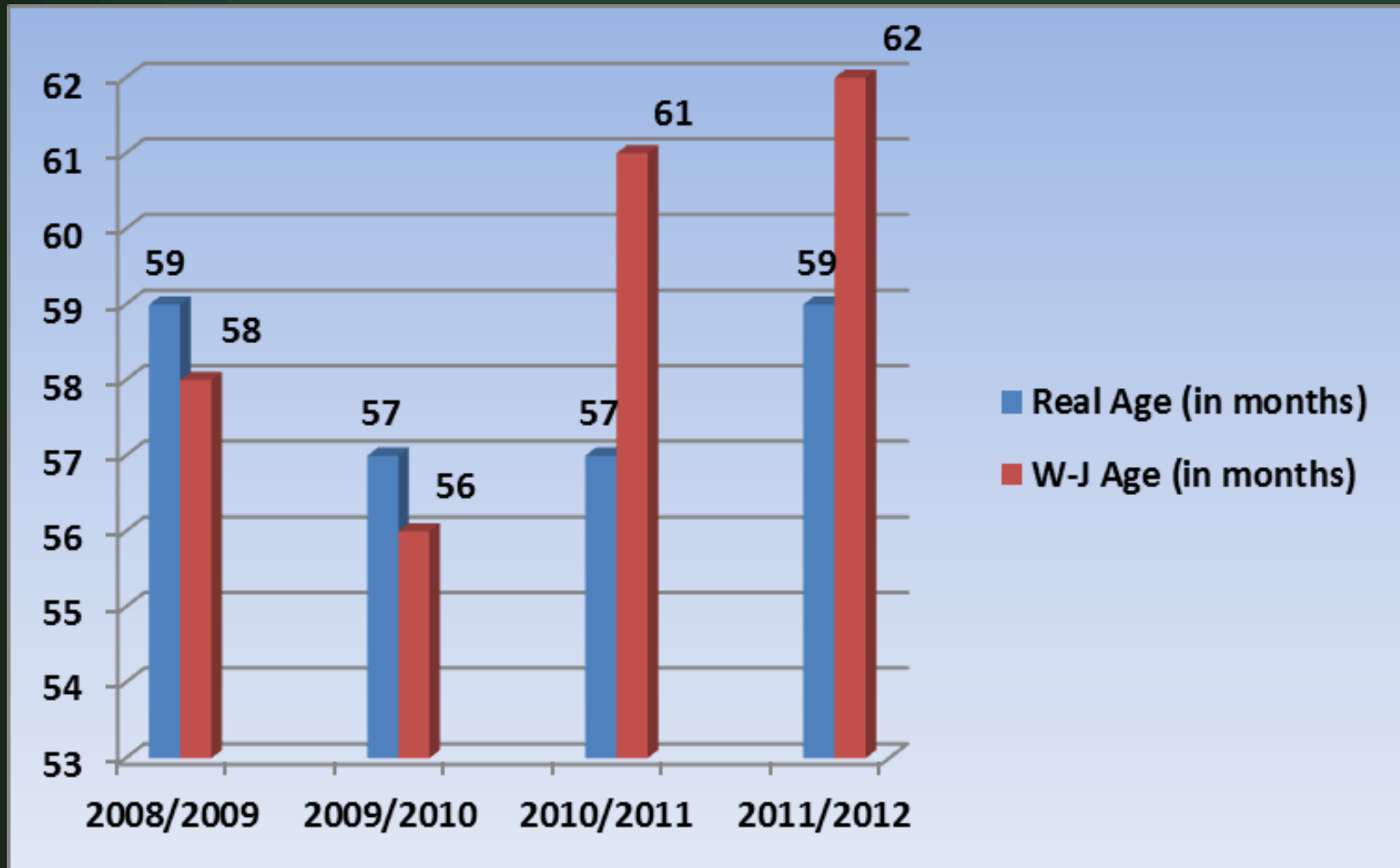
NOTE: W-J Age is a child's age-equivalent score on subscales A and B of the Woodcock-Johnson III assessment of mathematics development. The number of students included in each cohort ranges from 17 to 19, and includes only those students who were in the preschool program for the entire 10 months of the school year.

Ya'aa't'eeh!
(Navajo for "It is good")

Contacts

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www.ruraledu.org

STAR School
Service To All Relations

www.starschool.org

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Thank you

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