

Year 1 Annual Report for The Rural Trust

STAR School “3-to-3rd Project”

June 30, 2012

Basic goals of the Project

In July, 2011, the STAR School received the first half of the allocation from the Rural Trust (\$135,000) for the first year of developing and implementing the “3-to-3rd Project” ideas for the Montessori-based and culturally infused math teaching program for indigenous youth from age 3 to grade 3. The purpose of this report is to describe the progress that has been made in the first year, the challenges that presented themselves, and to request the balance of the funds to complete the project.

There are five major goals of this project:

1. Continue to analyze data and supporting research to refine approaches to provide effective training in the STAR Math approach for other indigenous schools.
2. Demonstrate how to utilize Montessori math materials and approaches with cultural adaptations for indigenous youth age 3 to grade 3.
3. Extend the successful approaches and materials used in preschool to teach math in Kindergarten through third grade.
4. Develop training materials and plans to train staff in 3 other indigenous schools to implement the STAR Math approach in their schools from age 3 to grade 3.
5. Implement STAR Math 3-to-3rd in 3 other schools serving indigenous populations.

1st Year progress

Analyzing data and supporting research

An evaluator was contracted to gather data on the STAR Math model and its success among indigenous youth and to identify the research supported core ideas and approaches that cause the program to work so effectively. The evaluator came out to STAR School twice during the year (once in the fall and once in the spring) to evaluate students’ progress in pre-K through 3rd grade in Math and to gather research supported concepts and ideas that demonstrate the core ideas of the program. In the first year of this project, the evaluator helped to clarify the

basic components of our program and align them with current child development research. Although the evaluation plan is still being refined, it is clear that this alignment will make evaluation more effective.

Demonstrating how to utilize Montessori math materials and approaches with cultural adaptations in 3-to-3rd

The full utilization of Montessori math materials and approaches with cultural adaptations was highly successful in pre-K and Kindergarten. The hiring of new teachers in grades 1,2, and 3, however, presented an unforeseen set of challenges. These are challenges that any school is likely to confront at one time or another, so the Project Director, the evaluator, and the training coordinator for this project determined that we needed to sort through this set of challenges successfully in our own school before we tried to export the program to other schools, so that we could use the experience of tackling these challenges successfully to inform our training program. Ultimately, it became evident that the new teachers in grades 1 through 3 not only needed classroom observations in pre-k and K to see the program in action, but also needed an online course in Montessori math specifically designed for the STAR Math project. The training coordinator arranged for this training and all of the grade 1 through 3 teachers completed it. Teachers in grade 1 through 3 also used classroom observations in Pre-k and K and discussions with the Project Director to implement cultural adaptations in their own classrooms.

The biggest issue for teachers to overcome has been integrating the child-centered approach of Montessori with the standards-centered (Common Core) approach required by the state (and most states) for grades K-12. It requires a shift in teaching philosophy which all of our teachers have liked once they started it, but it created a bit of fear because they weren't sure they would be able to meet the standards.

Extend successful Montessori teaching approaches and materials, Kindergarten through grade 3

As discussed in the section above, the challenge of having new staff in Kindergarten through grade 3 presented some challenges, but meeting these challenges only helped to strengthen the training program. The extension of the program in Kindergarten was highly

successful, and the testing results of Kindergarten students in math showed all students had reached grade level. The training coordinator successfully filmed teachers in pre-K through K demonstrating the successful teaching of math concepts and skills utilizing the high quality math materials and culturally adapted teaching techniques. The training coordinator also successfully arranged for an online Montessori math class for the new teachers that was specifically designed for the STAR Math approach. Once the new teachers had this training and the Montessori materials in their class, they faithfully implemented the STAR Math program.

Develop Training Materials and Plans to implement the STAR Math program in 3 other indigenous schools

Once it was determined that the development of the training package for the other schools depended upon a successful training of the STAR K to 3 new teachers, the focus was to develop the training package first and then work with the other schools. Based on the review of research as well as extensive classroom observations, the original 4 core concepts of the program were expanded to 10 core concepts and an introduction and conclusion. These core concepts are listed in the appendix to this report. Then the training coordinator observed and videotaped in the classrooms nearly every week to accumulate a total of 1200 minutes of videotaped math lessons and interviews of teachers about the core concepts that made this approach successful in the teaching of math. Frequent conversations among teachers, the Project Director, the evaluator, and the training coordinator resulted in excellent video examples of the techniques used. This large volume of video has now been organized into the 12 core areas and in the next year, will be developed to augment on-site training of the 3 other school staff. What became clear with the careful screening of the video training materials is that, although they are an excellent resource for teachers learning this new approach, they will be most effective when they are incorporated into a face-to-face training and prompted practice in which all the targeted staff of these new schools will need to come to the STAR School and take part in several days of intensive training and practicing these techniques. This is an aspect that has been woven into the grant that was funded by the Rural Trust, and we will need all the resources originally promised by the grant to make this happen in the second year of the grant.

Implement the STAR Math 3-to-3rd Project in 3 other indigenous schools.

The first year of this project has been focused on developing the training package which will be used to provide high quality training to guide the use of the high quality Montessori math materials that will also be provided to the other indigenous schools through this grant. While all of the foundational material has been gathered, the development of the full training schedule and being able to bring all the significant teachers to the training site will be happening in the second year of this project. The Project Director has developed an agreement with one Navajo school that they will fully implement the STAR Math 3-to-3rd approach in their school since they will be building their program. Of the two Native Hawaiian schools originally in the project, one has experienced significant staff changes but remains interested in adapting the STAR Math model. The other school is a standalone preschool and the challenge will be to convince the cooperating elementary school to collaborate fully in the project.

We are committed to provide materials and training to three additional indigenous schools as we agreed in the original proposal, but based on their abilities, we will work with schools who have the capacity with staffing and space to do the project.

Request for remaining funds

With the submission of this report, we request the remaining \$135,000 from the grant so that we can complete this excellent quality and highly meaningful approach to raising the math achievement of indigenous youth.

Appendix

Film Segments and main concepts to be covered:

- I. Introduction
- II. A Focus on Math: Why Math?
- III. A Focus on Math: How We Do It.
 - a. High Quality Materials
 - b. Multi-Sensory/ Multimodal
 - c. Math Languageing – Using appropriate advanced vocabulary
- IV. A Focus on Math: How We Do It.
 - a. Math infused throughout the day
 - b. Positive Relationship with Math
- V. A Focus on Math: Where We Do It: Math In Cultural Context
- VI. Adapting and Adopting Montessori
- VII. Supportive School Values
- VIII. Place Based Approaches to Learning
- IX. Multi-lingual stimulation
- X. Honoring Indigenous Values
- XI. Prepared Adults/ Prepared Environment
- XII. Conclusion