IN SERVICE TRAINING OF HEAD START TEACHERS TO OVERCOME EARLY RISKS OF MATHEMATICS FAILURE: THE MATHSTAAR PROGRAM

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This action research project is designed as a music-based intervention to address and overcome some of the risk factors for low achievement in mathematics that research has linked to poverty level. The National Assessment of Educational Progress found that children who are eligible for school lunch programs in 4th grade score on average 13 points lower on the math portion of the assessment than the overall average and 22 points below those who were not eligible for school lunch programs. When parent educational level is examined, we also see a marked correlational decline in NAEP scores on the mathematics portion of the test linked to parents' educational level.

The current research study was funded by an AERA/OERI research grant. Its main goal at the outset was to examine the risk factors associated with lower mathematics achievement as early as kindergarten for children from low socioeconomic groups and the effect of in-service training for Head Start teachers on overcoming these risk factors and from children whose parents have an education level of high school or less. This two-year study provided valuable preliminary data, which lead directly to the next stage of what has developed into a larger research project called MathSTAAR.

According to the National Research Councils report Adding It Up (Kilpatrick, Swafford, & Findell, 2001),

> . . . today's students . . . will face new demands for mathematical proficiency that school mathematics should attempt to anticipate. Moreover, mathematics is a realm no longer restricted to a select few. All young Americans must learn to think mathematically, and they must think mathematically to learn (p.1).

However, the National Assessment of Educational Progress (NAEP) has consistently found that children who are economically disadvantaged score on average up to 30 points lower than the overall national average on the mathematics portion of the test (National Center for Educational Statistics, 2007). Other research indicates that family income – even more than ethnic group, gender, and school funding levels, is the most consistent determinant of low achievement in mathematics, with indications noted as early as entrance into kindergarten, (Jordan, Kaplan, Locuniak, & Ramineni, 2007; Stipek & Ryan, 1997).

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