

# Sam Houston State University

## Research Results



### Study description:

The study was conducted between by Terry D. Bilhartz, professor of history; Rick A. Bruhn, professor of education; and Judith E. Olson, director of the Learning Assistance Center at Sam Houston State University, Huntsville, Texas, USA.

A total of 66 children ages four to six years completed the study and were tested, half receiving no additional music instruction (called the control group) and the other half (called the experimental group) participating in a *Kindermusik for the Young Child* Year 1 Pilot Program. One third of the children in both the control and the experimental groups attended Head Start Programs, while the remaining two-thirds in each group were pre-schoolers who lived in middle and upper income households.

At the end of the study, children of parents or guardians in the experimental group who met "low" compliance standards improved the equivalent of an increase from the 50th percentile on a standardized intelligence test to above the 78th percentile. Students whose parents or guardians met **"satisfactory" compliance standards jumped on the average from the 50th percentile to above the 87th percentile.** (NOTE: Satisfactory = ONLY 30 minutes spent per week at home listening to the CD or doing home activity pages)

### Key messages:

Strong correlations were found between musical abilities in young children, particularly the ability to match vocal pitches and reproduce rhythmic patterns, and abstract reasoning abilities. These findings support the theories formulated by Gordon Shaw, Francis Rauscher and other researchers who have argued that early music instruction improves intelligence, specifically producing cognitive benefits in the area of spatial-temporal reasoning.

An equally compelling finding is the indication that the level of parental involvement in music training can greatly affect the amount of improvement in intelligence.

The conclusions of the study support the "nurture" side of the argument in the on-going debate over whether intelligence is solely DNA determined and static, or whether it can be enhanced through life experiences.

The study also showed that parental time spent with a child is a more important factor in predicting intelligence test success than such factors as single parent households, poverty, low parental education levels, and ethnic minority status.

The research community has taken special interest in the study's results. An article on the research group's findings has been accepted for publication in an issue of the *Journal of Applied Developmental Psychology*.

