

# **The parent is the child's most important and influential teacher!**

## **STUDY AFFIRMS EARLY MUSIC TRAINING IMPROVES INTELLIGENCE** *Results Underscore Importance of Parental Involvement in Children's Learning*

### Study description:

The study was conducted between September 1997 and May 1998 by Terry D. Bilhartz, professor of history; Rick A. Bruhn, professor of education; and Judith E. Olson, director of the SHSU Learning Assistance Center.

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) participated in a early childhood music 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 experiment 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 50<sup>th</sup> percentile to above the 87th percentile.

### 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.

\* Equally compelling finding is indication that the level of parental involvement in the music training can greatly affect the amount of improvement in intelligence. 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 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 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 a future issue of the Journal of Applied Developmental Psychology.

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After receiving a Stanford-Binet intelligence test and a musical skills assessment test, the experimental students were offered 75 minutes of music training per week for 30 weeks. Parents or guardians were asked to attend portions of the weekly lessons and to complete home assignments with their children. Children in both groups were re-tested at the end of the program.

The experimental group children who were active participants in the classes and whose parents helped them with the home musical activities showed significant gains on the areas of the Stanford-Binet subtests that measured abstract reasoning abilities. No significant changes during the treatment period were registered on the verbal intelligence test scores for either the experimental or the control group children.

The magnitude of improvement in abstract reasoning scores varied directly with the level of participation in the music curriculum. The researchers set compliance criteria to measure the degree of subject and caregiver participation in the program.

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In addition to demonstrating the effect of early music instruction on cognitive development, the results of the study also underscore the importance of parental involvement in the intellectual formation of young children. Children who participated in the music activities with their parents at least 30 minutes a week scored significantly higher on both their intelligence and musical skills tests than the children who attended the classes but did not receive this level of parental assistance.

A regression analysis of the data indicates that the time of parental involvement in the music exercises was a stronger predictor of child test performance than other "at risk" factors such as single parent households, poverty, low parental education levels, and ethnic minority status.

According to Bilhartz, "A number of studies have shown that low socio-economic class is a predictor of poor academic performance, but often these studies are unable to identify what it is about socio-economic class that contributes to low performance.

"This study, which documents the relationships between certain well-known at-risk factors and cognitive outcomes, suggests that low test scores among children living in disadvantageous environments can largely be explained as a consequence of lower levels of child-parent interactions."

Additional study needs to be done to determine the optimal times for introducing young children