

BrainSkills Pilot Study

A pilot experiment on the BrainSkills cognitive intervention program was conducted during the Spring '09 semester with middle school students in Petersburg, Virginia. In this study, we are still awaiting the data point of the final SOL (Standards of Learning)* scores for the year, but preliminary results from interim tests are encouraging. The study had three classes that received cognitive training (high performing students in an advanced algebra class, normally performing students in a regular algebra class, and underperforming students in a general math class), and a control class of regular algebra that received no cognitive training. All students were in the 8th grade at the same Petersburg middle school. So far we have data from the pre-SOL test administered when the training began, and a second pre-SOL test administered nine weeks later. The experimental classes received one hour of supervised intervention per week, using the BrainSkills cognitive training administered on-line.

Data were analyzed with a one-way analysis of covariance on the post-test scores using the pre-test as a covariate. The overall difference among the classes was significant [$F(3,64)=3.93$, $p<.05$]. The effect size was very robust (adjusted R-squared= .341). Further exploration of the effect with a Tukey** post hoc test revealed that means for the three experimental groups (75.53, 78.25, and 72.25) were all significantly different from the control (58.0), but none of the experimental groups were significantly different from the others. This preliminary finding indicates that the cognitive intervention does have transfer to mathematics performance, and that the intervention has similar effects across ability levels. This could have a huge impact as a method of increasing the mathematics performance of minority inner-city students.

Additional studies are ongoing with larger samples sizes.

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*The Standards of Learning for Virginia Public Schools describe the commonwealth's expectations for student learning and achievement in grades K-12 in English, mathematics, science, history/social science, technology, the fine arts, foreign language, health and physical education, and driver education.

**Single-step multiple comparison procedure and statistical test generally used in conjunction with an ANOVA to find which means are significantly different from one another.