TRENDS IN NEUROSCIENCE AND EDUCATION: THE EFFECTS OF ARTS-INTEGRATED INSTRUCTION ON MEMORY FOR SCIENCE CONTENT

This conceptual framework describes how arts integration methods use research-based, memory-enhancing activities to potentially improve memory for non-arts content.

- Low performing students in the arts-integrated schools largely reached the achievement of their average and high performing peers; a statistically significant difference in scores no longer existed. These findings suggest that applications of arts-based interventions may have a more powerful impact on academic outcomes for students from low-performing groups than students from proficient and advanced groups.
- Using scores from the annual state assessment to determine reading performance, data showed that students scoring at the basic level benefited the most from art-integrated instruction compared to peers performing at the proficient and advanced reading levels.
- Basic readers remembered significantly more science content learned through the arts at the delayed post-test than basic readers who learned science through conventional methods.
- Using arts-integration instruction to teach science content was as effective or better than conventional science instruction in increasing long-term memory for students’ science content knowledge.

EDUCATION TRENDS: PREPARING EDUCATORS AND SCHOOL LEADERS FOR EFFECTIVE ARTS INTEGRATION

Integrating arts education—has been proven beneficial in improving student learning and developing thinking skills and capacities, as well as supporting the civic skills necessary to contribute as a member of a diverse community.

- Research shows that bringing the arts into the instruction of other classroom subjects benefits students’ academic, cognitive, and personal outcomes.
- Studies show that arts integration has a positive effect on student academic achievement and on personal outcomes and engagement.
- The evaluations found positive impact of arts integration on students’ cognitive skills, engagements and attitudes about learning—especially for low-performing students, diverse learners and students with special needs.
- Incorporating the arts into the curriculum substantially increased teacher engagement and satisfaction.
Staging STEM Data 2018-19 Wrap-Up

- On average, a Staging STEM residency improves a classroom’s understanding of a TEK by 33% in a two-week period.

- When looking specifically at the bilingual classes that have participated in our program, we have seen an average increase in understanding of 39%.

- Understanding for K-2nd grade classrooms increased by an average of 29% during our two-week program.

- Understanding for 3rd-5th grade classrooms (testing grades) increased by an average of 34% during our two-week program.

- Staging STEM residencies held in an AIN PD teacher’s classroom saw an average increase of: 39%

- By the end of 18-19, Staging STEM will have carried out 5 residencies in schools that were rated IR (improvement required) in student achievement. So far, we have completed 3 out of 5 residencies and have seen an average increase in understanding of 59% during our two-week program.

By District:
- Fort Bend ISD average increase: 29%
- Spring ISD average increase: 24%
- Houston ISD average increase: 41%
- Aldine ISD increase (1 residency – 8th grade): 59%

"Watching these Teaching Artists work with the kids made me rethink how I should be doing my lesson plans. The students were highly engaged and learned a lot about phases of the moon." — Sandra McMillan, 2nd grade teacher, Hirsch Elementary