A Comparison of Cohort Data From 2007-2008 to 2010-2011 Regarding

Fine Arts-Related Instruction's Influence on Academic Success

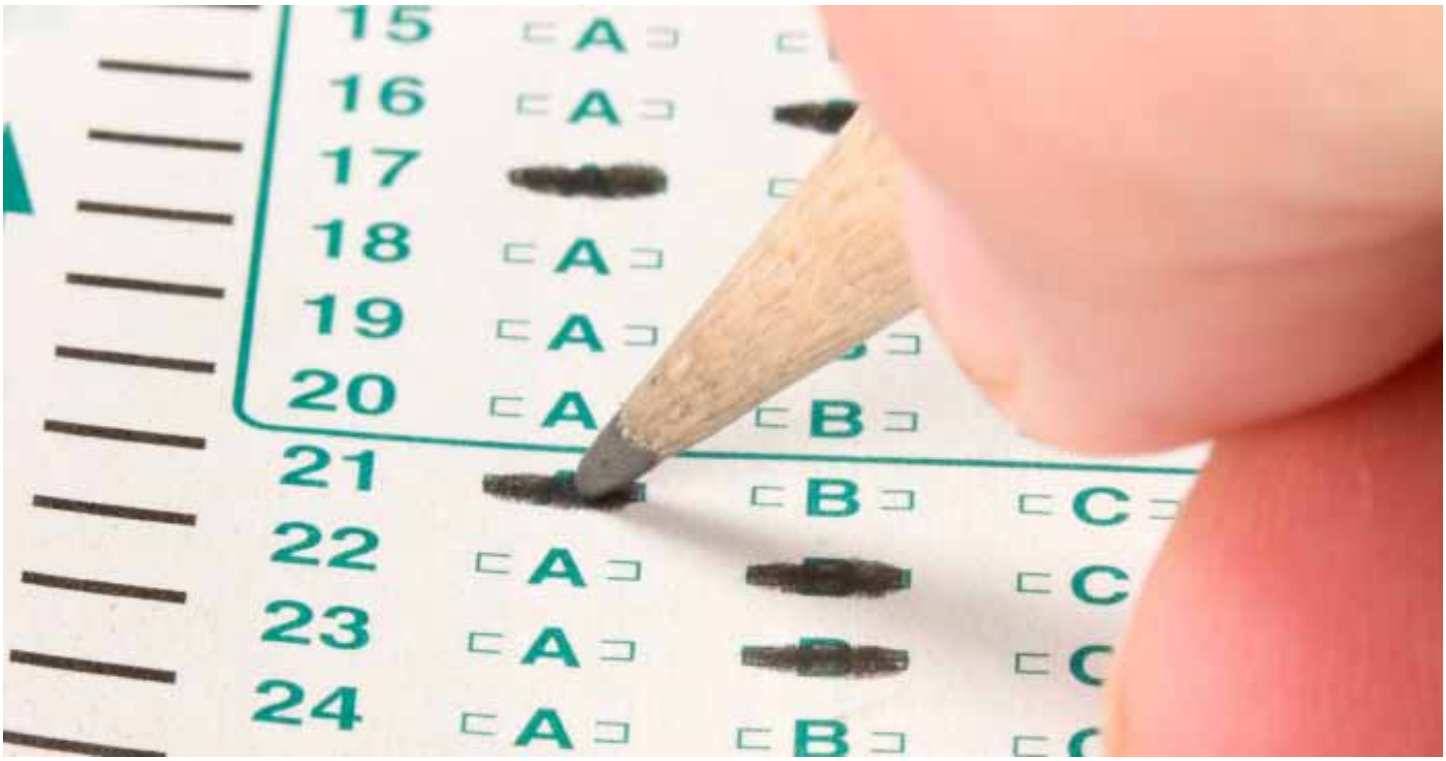
by Steven N. Kelly, Ph.D.

Introduction

In 2009, I was asked to analyze data of all 12th grade public school students graduating in the 2007-2008 academic year that was provided by the Florida Department of Education. It is important to remember the data represented *all* 12th grade students, both students in arts-related classes and those not taking any arts classes. The data demonstrated a strong relationship between individuals who participated in school arts experiences and higher academic success as demonstrated by grade point averages, scores on the Florida Comprehensive Assessment Test (FCAT) and math and verbal portions of the SAT exam. The results showed the positive effect of participation in arts-related classes on a broad base of individuals, including students from varying races, ethnicities and socioeconomic levels. Furthermore, the data demonstrated that students participating in arts classes for eight or more semesters (four or more credits) benefited even more.

I have now been asked to provide an analysis of new data, provided by the Florida Department of Education, of all 12th grade public school students graduating in the 2010-2011 academic year. Results of the new data analysis reflect findings from the 2007-2008 analysis by showing a continued strong relationship between individuals who participate in school arts classes and higher academic success. The new findings continue to demonstrate that success is not limited only to students participating in arts-related classes over long periods of time, but that students enrolling in a minimal number of arts experiences also benefit more than students not enrolling in any arts classes. However, there continues to be a significantly greater difference between students enrolling in four or more credits of arts and individuals not enrolling in any arts-related classes. This difference extends across socioeconomic factors and race categories. There are also strong indicators that students enrolling in arts classes have a higher graduation rate than students not enrolling in these classes. Consequently, participation in arts classes appears to increase the likelihood that students will stay in school, thus reducing school dropout rates.

The addition of the 2010-2011 data continues to provide a comprehensive pattern of influence that K-12 arts education experiences contribute to the overall academic success of Florida public school students. Clearly all students continue to benefit academically and socially from participation in school arts-related programs. Following are highlights of the new data comparisons of 2007-2008 and 2010-2011.



Enrollment and Graduation

The new data show an increase in the number of students taking arts-related classes. Perhaps more important, this increase is across all race categories and socioeconomic indicators. One important fact is that more 12th grade students are taking four or more credits in arts classes. Influencing individuals to remain in school appears to be a major consequence of students taking arts classes. Subsequently, students who stay in school achieve better academic performance and graduate from school. Furthermore, the data indicate:

- There is an overall increase in the number of 12th grade students taking arts-related classes.
- The enrollment increase is also reflected in the number of 12th grade students when considering free/reduced lunch and across all race categories (black, Hispanic, white).
- More 12th grade students are taking four or more credits in arts-related classes.
- There is a marked increase in the number of students qualifying for free/reduced lunch taking arts-related classes.
- There is an overall increase in the number of students graduating with a standard high school diploma who took an arts-related class.

Higher Academic Success

In comparing overall grade point averages (GPA) of students meeting Bright Futures criteria against the cumulative state grade point averages, GPA scores for students taking arts-related classes remain stable, indicating that students not meeting Bright Futures criteria continue to benefit from arts-related experiences as much as those meeting Bright Futures criteria. The statistic is important because it contradicts many perceptions that the arts benefit only "smart" and "talented" students and individuals with the resources to gain these experiences. Furthermore, socioeconomic levels appear to be minimally influential. The GPA remains stable when comparing students with free/reduced lunch to students not receiving free/reduced lunch as well as across all race categories. Once again, the new data illustrate a trend that all students, not only the "talented" individuals, benefit from arts experiences.

Overall, there are more 12th grade students enrolled in arts-related classes taking the SAT. Increases in the number of 12th grade students taking the SAT who are enrolled in arts-related classes are also reflected in both free/reduced lunch and race categories. When analyzing free/reduced lunch and race data, for most arts-related classes, students enrolling in four or more credit hours scored higher on math and verbal portions of the SAT than students receiving no arts instruction. Furthermore:

- Overall math and verbal scores on the SAT remain stable (when accounting for the differences in how the SAT is currently graded as compared to 2007-2008).
- Overall SAT scores for both math and verbal exams continue to show a trend that SAT scores improve as students take more arts-related credits.

Scores on the Florida Comprehensive Assessment Test (FCAT) for reading, math and writing of students taking arts classes remain stable when comparing scores from 2010-2011 to 2007-2008. Differences in FCAT scores (pluses and minuses) from 2007-2008 to 2010-2011 are not statistically

Continued on page 10

Continued from page 9

different (p = .05), indicating stability. Furthermore, a comparison of students scoring at Level 3 or better on all FCAT sections to students scoring at Level 1 or 2 demonstrate continued benefits of the arts for all students. Data comparing free/reduced lunch and race reflect the overall comparisons regarding FCAT scores and benefits.

Summary

This paper describes an analysis of data from two different academic years of 12th grade public school student populations from the state of Florida. The analysis provides evidence that all students participating in arts-related classes: 1) stay in school; 2) have higher graduation rates; 3) perform higher in academic areas such as math, reading and writing; and 4) achieve higher scores on standardized tests such as the SAT and the Florida Comprehensive Assessment Test. The analysis is not an indicator of causation but of relationships. The process of learning and connecting information in multiple ways is far too complex for a single area to be the only contributor. However, it may be possible that the wide diversity of experiences typically found in arts classes are effectively contributing to the total education of all students. Consequently, arts instruction should be viewed as a core component in the process of educating students for success in a global society.

Findings Supported by Research

Results of this analysis are supported by a similar recent analysis from the West Virginia Music Educators Association. This analysis of cohort data from the 2006-2007 academic year showed that public school students with more arts credits outperformed their peers in nearly every indicator, even when disaggregated for disability and poverty. West Virginia students were 1.6 times more likely to reach proficiency in reading/language arts if they took two or more arts credits as opposed to the required single credit. Students with disabilities were twice as likely (West Virginia Music Educators Association, in press).

Furthermore, findings from the Florida analysis support and further contribute to recent neuroscience and social science research regarding the benefits of arts instruction. Research by Caroni, Donato, & Muller (2012) indicates the possibility that arts instruction, especially instruction over extended periods of time, influence cognitive skills affecting many areas of learning. Additionally, researchers (Aheadi, Dixon, & Glover, 2010; Demorest, 1992) have shown various ways the human brain reacts to musical stimuli, suggesting the possibility of increased cognitive activity when exposed to musical experiences. Furthermore, the National Dropout Prevention Center/Network (2012) has cited experiences in the arts as contributing to lower student dropout rates across the country. All of these studies reflect the trend shown by the Florida data presented in this analysis.

It appears once again that arts-related classes can be viewed as more than public performances and demonstrations. Based on the comparative data in this analysis, arts instruction involves more than developing artistic skills for the "talented" few. Experiences engaging cognitive, kinesthetic and aesthetic learning typically occur in all arts classes on a daily basis. Consequently, the multisensory phenomena experienced through the arts appear to influence all students' social behavior and academic performance, as well as artistic awareness. Few experiences in school curricula provide such a comprehensive growth.

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About the Author

Steven N. Kelly, Ph.D., is a professor of music education in the College of Music at Florida State University. He received his bachelor's and master's degrees in music from the University of North Carolina at Greensboro and his Ph.D. in music education from the University of Kansas. Dr. Kelly has published in international and national research journals and regularly presents papers and workshops at state, regional, national and international conferences. He serves on the editorial boards of the *Journal of Research on Music Education*, *Research Perspectives in Music Education* and *Journal of Band Research;* is the editor-in-chief of *Florida Music Director*; and is the author of the textbook *Music Education in American Society: A Social and Cultural Understanding of Music Education*.

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