The Relationship Between Music Aptitude and Academic Achievement

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Abstract

The issue that this master's thesis addresses is the relationship between music aptitude and academic achievement and its implications for recruiting, retaining, and placing effective music teachers. The purpose of this master's thesis is to examine the relationship between academic achievement and stabilized music aptitude in high school seniors intending to begin a collegiate music program of study at Long Island University (LIU) Post. In addition to the relationship between music aptitude and academic achievement, the relationship between stabilized music aptitude, high school GPA, SAT score, ACT score, and New York State Teacher Certification Exam scores and first year teaching evaluations will also be examined. The researcher gathered data from the LIU Post Department of Music, College of Education and Information Sciences, and three LIU Post Music Education program completers who are in their first year of teaching. The findings show that there is a statistically significant correlation between composite music aptitude and high school GPA and composite music aptitude and ACT score. This master's thesis will be useful for music educators and music teacher preparation programs because it points to the importance of carefully examining high school GPA, ACT score, and stabilized music aptitude as indicators of success in first year teachers.

Background

Music and art programs in the United States are experiencing budgets cuts or in some instances eradication. Students do not have the chance to realize their potential for music if the program is eradicated or the budget is reduced. All students have an aptitude for music and all students can succeed in music if given the opportunity. In this study the researcher is investigating the relationship between music aptitude and academic achievement. The researcher believes there is a positive relationship between music aptitude and academic achievement. The Common Core initiative in today's schools focuses on mathematics and English standards and plays an important role in academic achievement. The Common Core has been adopted by 44 states across the country, which calls for the addition of elements of mathematics and English into other subject areas including music. Because of this, it is important that music teachers have knowledge of their students' academic achievement as well as their own aptitude for music.

Research Questions

1. Which areas of the brain are used during academic activities such as mathematics and language? Which areas of the brain are used during music activities? Are they similar or different?
2. What is the relationship between music aptitude, music achievement, and academic achievement?
3. What is the relationship between music aptitude, high school academic achievement, and NY State Teacher Certification Exams?
4. What is the relationship between music aptitude, high school academic achievement, and first year teaching evaluations?

Methods

This thesis used a mixed methods design. Quantitative analysis was used to determine the relationship between music aptitude and high school academic achievement as well as the relationship between music aptitude, high school academic achievement, and teacher certification exam scores. Quantitative and qualitative analyses were used to determine the relationship between music aptitude, high school academic achievement, and first year teaching evaluations.

Data collection took place during LIU Post's Department of Music audition days. Rosters from audition days during the years 2008-2012 were utilized, which have students' music aptitude, SAT score, ACT score and high school GPA listed. Two hundred and ninety one students auditioned for the Department of Music between 2008-2012.

In addition to the 291 high school seniors, three music education program completers were included in a longitudinal portion of the study. These program completers are a convenience sample because they were chosen based on availability.

The researcher hand coded the data from the first-year teacher evaluations. Emily and Hannah's observations use the HEDI (Highly effective, Effective, Developing, Ineffective) model because they currently teach in public schools. Emily and Hannah's evaluations also have domains as indicated by New York State. Angela's evaluations do not use a specific model. The researcher took Angela's evaluations and applied them to the HEDI model.

Results

Pearson's Correlation Coefficient Calculator was used to determine the relationship between music aptitude and high school GPA, music aptitude and SAT score, and music aptitude and ACT score. The correlations between stabilized music aptitude and high school GPA and stabilized music aptitude and ACT score were statistically significant, while the correlation between stabilized music aptitude and total SAT score was not statistically significant.

Correlation	Number of Pairs in Sample	R Score	p-value
Stabilized Music Aptitude and High School GPA	N=291	0.1646	0.004878
Stabilized Music Aptitude and SAT Score	N=272	0.0751	0.216972
Stabilized Music Aptitude and ACT Score	N=67	0.2605	0.033249

Results cont.

The three program completers in this study all had high overall GPAs and average to high music aptitude. The scores on the Music CST have an opposite relationship with their music aptitude. Angela who received the highest score on the Music CST has the lowest aptitude, but she has the highest GPA of the three women. There is an agreeing relationship between high school GPA and Music CST score for this sample.

Emily and Hannah both work in public schools in New York and their evaluations use the HEDI model. Angela works in a private school and has a write-up evaluation from her principal that does not use a particular model. The program completers each have two lesson observations and they fall into the Effective category most often.

Program Completer	Music Aptitude	High School GPA	SAT Total Score	ACT Score	Music CST Overall Score
Angela	44	95	1610	N/A	245
Emily	65	89	1720	25	228
Hannah	89	90	N/A	23	223

Discussion

One way to explain the correlation between high school GPA and music aptitude is that many students involved in music classes in high school are accelerated students who take college-level or Advanced Placement (AP) classes. Another way to explain the correlation between high school GPA and music aptitude is that music students could have received inflated grades in their music classes, which brings up their overall GPA. There is a possibility that the discipline required to fully realize high aptitude in music may point to the discipline required to achieve academically.

This study shows that high school GPA, ACT score, and stabilized music aptitude are indicators of success in first year teachers. Though the sample size is extremely small and not diverse, the researcher believes this to be true. The three program completers all had high GPA's and average to high music aptitudes. The ACT scores for the two who took the exam were also higher than the national average.

The Music CST scores of the three program completers had an opposite relationship with their music aptitude meaning if they had a high aptitude, they scored lower on the Music CST and vise versa. The Music CST does not allow test takers to show their musicianship skills. It is an achievement test that focuses on content knowledge.

The end of the year evaluations of Angela and Emily show that they are both skilled teachers. Both women have average music aptitude, their GPA's are high, and their scores on the ACT indicate their success in the classroom.

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