



Program and Impact Evaluation Findings

Education Through Music, Inc. 2014-2015 School Year Findings



INTRODUCTION

Music education has demonstrated benefits for children’s cognitive abilities, such as reading, writing, and math skills, as well as their social/emotional skills, like self-esteem, confidence, and discipline (Hallam, 2010). The effects of exposure to the arts even extend into adulthood: longitudinal studies have shown that among students of low socioeconomic status, those who had deeper exposure to the arts during adolescence were 23% more likely to attend college and, once there, attained higher grade point averages (Catterall, 2012). However, arts education is lacking in many schools: 59% of New York City (NYC) public schools do not have a certified, full-time music teacher on staff and 51% of principals reported that budgetary constraints were the greatest barrier to implementing an arts education program (New York City Department of Education, 2015). Altogether, these findings confirm the necessary role of Education Through Music (ETM) to support music education throughout NYC schools.

ETM is guided by the mission that every child should have access to high-quality, comprehensive music education—both as a core subject in its own right, as well as a means of supporting academic achievement and general development. Since its first school partnership in 1991, ETM has strived to ensure that every student in NYC’s low-income neighborhoods receives this kind of music education, and the organization has expanded to progress towards this goal. During the 2014-2015 school year, ETM partnered with 36 schools in low-income neighborhoods and served almost 20,000 students across four boroughs in Kindergarten through 8th grade. The strength of the program is driven by the rigor of ETM’s music education curriculum, which has been carefully designed to enhance

students’ musical and academic skills. Instructional content is not only comprehensive, sequential, and skills- and standards-based, but is also supported by bi-annual student performances that aim to boost students’ social/emotional development. Moreover, music teachers are encouraged to collaborate with classroom teachers to integrate their curricula, thus enhancing students’ learning across all academic subjects. All of these important features of ETM’s program are reinforced through the ongoing professional development and mentoring relationships that ETM provides its music teachers.

The end of each academic year brings with it an opportunity to evaluate the continued success of ETM and to keep track of its progress toward its mission in the short term. In light of this, this report provides an assessment of the impact of ETM’s music education programming on the students and communities it serves that is based on data from the 2014-2015 academic year. It also provides an overview of the evaluation design, data collection methods, and analyses that were used in this evaluative process. Overall, results of ETM’s 2014-2015 evaluation research have shown the beneficial effects of ETM’s music education program on students’ musical and social/emotional development; not only did students, parents, teachers, and principals report ETM’s positive impact in all of these domains, but students at ETM partner schools also demonstrated an observable increase in academic test scores.

EVALUATION DESIGN

Throughout the 2014-2015 school year, ETM collected data of various kinds from hundreds of school personnel and parents, as well as thousands of students. In addition to evaluation efforts made across all partner schools each year, ETM continued its more rigorous longitudinal evaluation study that began in 2013-2014. This longitudinal study, which centers on nine schools in one community school district in the Bronx, allows ETM to gain a deeper understanding of its program's effects on students through collection of individualized academic and survey data until students reach age 18. Moreover, the schools selected for this longitudinal study are generally representative of the demographic ETM serves across all partner schools, allowing for generalizability of these findings to our overall population of students (see Appendix A).

School Personnel

ETM distributed surveys to all principals and classroom teachers across all 36 partner schools. Surveys were conducted online, and invitations to participate were sent via email. Though survey questions differed for principals and classroom teachers, all participants were asked about their experience with ETM's services and their view of the impact that ETM's music education program has on students in their schools. These questions were tailored to align with ETM's mission, asking about attitudes toward school and behaviors in class. During May and June of 2015, ETM received survey responses from 14 principals and 229 classroom teachers of Kindergarten through 8th grade.

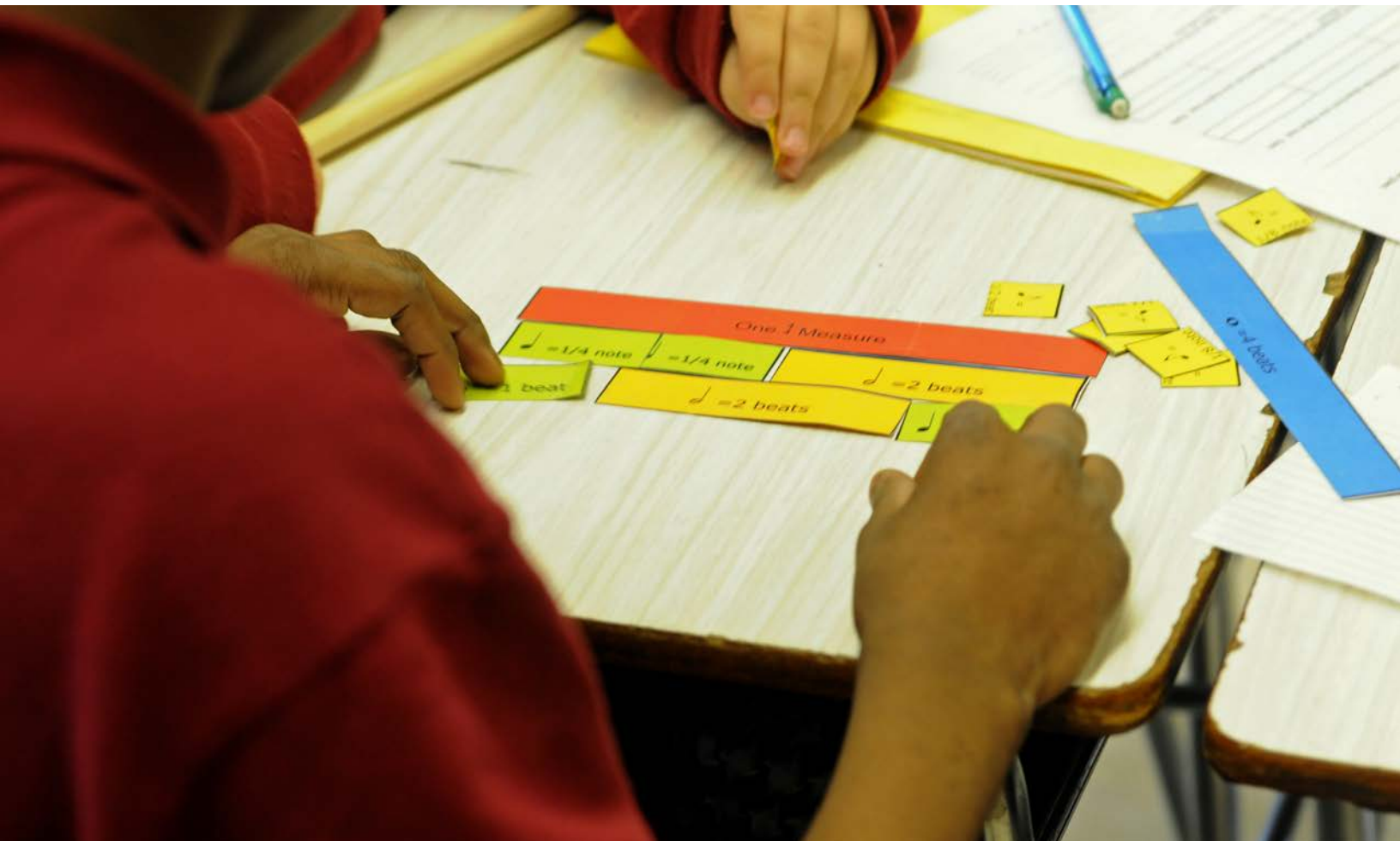
Parents

Parents from the nine schools in ETM's longitudinal evaluation study were invited to participate in a survey in May 2015. Two hundred fifty-six parents responded to the survey, answering questions about the efficacy of ETM's music program, as measured by the academic and social/emotional improvements they observed in their children. Additionally, seven parents of students who had previously graduated from a partner school completed a follow-up survey regarding their children's participation in music activities after ETM.

Students

ETM collected Music Skills Assessments from 4,396 3rd-8th grade students across all ETM partner schools. Music teachers administered this written test during music class at the end of the 2014-2015 school year.

ETM collected additional surveys from 268 students in longitudinal schools for whom parental consent had been provided. In the fall of 2014, 41 3rd-5th and 57 6th-8th grade students participated in a pre-survey consisting of questions of their current perceived musical skills. In the spring of 2015, 161 3rd-5th and 106 6th-8th grade students participated in a post-survey in which they were asked to rate their perceived musical skills once again, as well as whether they believed that music class had benefited them in areas such as their self-esteem and creativity and what music had taught them about themselves. The survey for 3rd-5th grade students was modified from the *After-School Initiative's*



Toolkit for Evaluating Positive Youth Development (The Colorado Trust, 2004). The survey for students in grades 6-8 was modified from the *Youth Engagement Survey 2.0* (Hanson & Larson, 2005). Finally, ETM obtained New York State (NYS) exam scores in both Math and English Language Arts (ELA) of 1,094 individual students (700 for both 2013-2014 and 2014-2015 academic years, 209 for 2013-2014 alone, and 185 for 2014-2015 alone).

Comparison Sample

In order to further demonstrate the impact of ETM's music education on students' development, the ag-

gregate NYS Math and ELA exam scores of ETM partner schools were compared to those of ETM peer schools. The NYC Department of Education (DOE) identifies approximately 15 peer schools for each public school in NYC; that is, the DOE composes lists of schools that are demographically similar to one another. From the DOE's list of peer schools, ETM selected a group of peers that were located in the same borough of NYC, served the same grade levels, had never partnered with ETM, and did not offer music classes. The DOE's 2014-2015 Arts in Schools Dataset was utilized to determine which peer schools did not offer music.

SUMMARY OF FINDINGS

1. Academic Improvement

Partner schools begin to see student exam scores rise after the third year of adopting the ETM music education program

Within the longitudinal sample, students in schools that have partnered with ETM for four or more years earned significantly higher Math and ELA (English Language Arts) exam scores than students at schools that have partnered with ETM for a shorter period. This suggests that there is a timeline on which an ETM partnership translates into test score gains.

Students attending schools that have partnered with ETM for long enough to meet this threshold show greater academic achievement than their peers at non-ETM schools

Students at schools that have partnered with ETM for four or more years earned significantly higher Math and ELA exam scores than students at peer schools. These findings are consistent with the attitudes of surveyed students, parents, teachers, and principals, who overwhelmingly relate that they have observed the academic impacts of ETM firsthand.

Students with disabilities at longtime partner schools earned higher Math exam scores than those at peer schools

This finding provides evidence of ETM's positive impact on students with special needs and underscores ETM's success in enriching the educational experiences of every student in its partner schools, regardless of ability.

2. Social/Emotional Development

Students, parents, and teachers report the positive effects of ETM's music education program on social/emotional wellbeing

In almost every category of social/emotional development (e.g., confidence, creativity, cooperation, artistry, etc.), upwards of 90% of students, parents, and teachers agreed that participation in the ETM program leads to noticeable, positive impacts.

3. ETM Program Satisfaction

ETM is highly regarded by partner school personnel

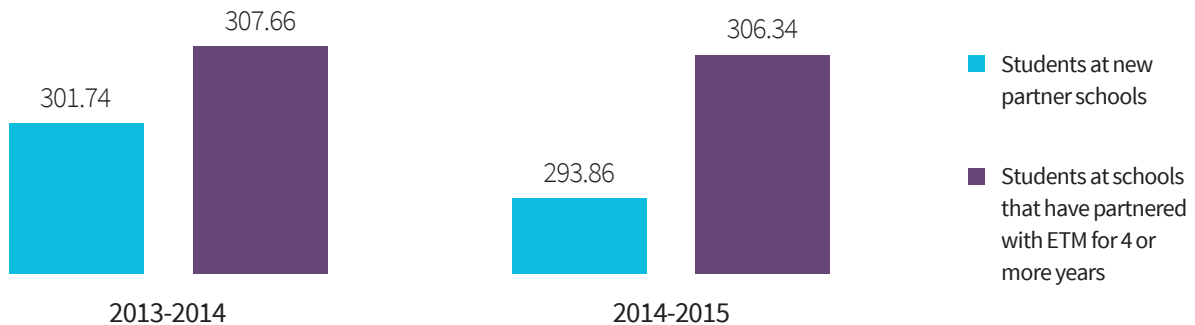
Consistent with findings from previous years, principals of ETM partner schools offered positive ratings of ETM; 93% of surveyed principals appraised ETM as "excellent" in providing and/or supporting a quality music education program.

KEY FINDINGS - ACADEMIC IMPROVEMENT

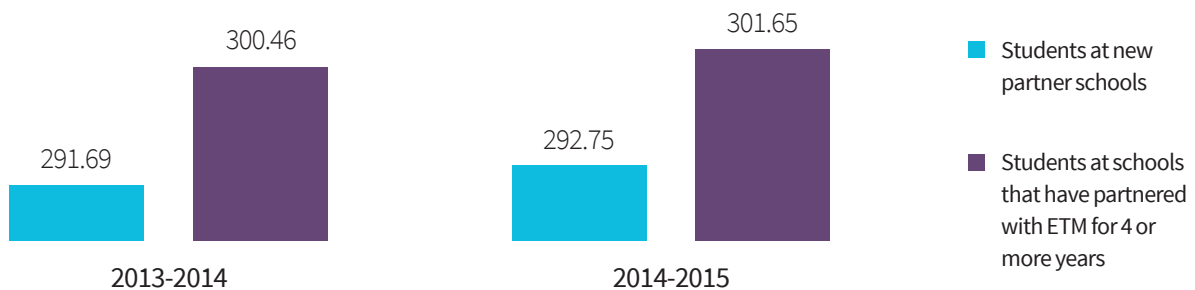
Partner schools begin to see student exam scores rise after the third year of adopting the ETM music education program

This is clear when examining the longitudinal sample, in which students in schools that have partnered with ETM for four or more years earned higher scores on annual NYS Math and ELA exams than students in schools that have partnered with ETM for fewer than four years. This holds true for both the 2013-2014 and the 2014-2015 academic years, wherein exam score differences were statistically significant at the 0.05 level.

Average Math Scale Scores - Longitudinal Sample



Average ELA Scale Scores - Longitudinal Sample

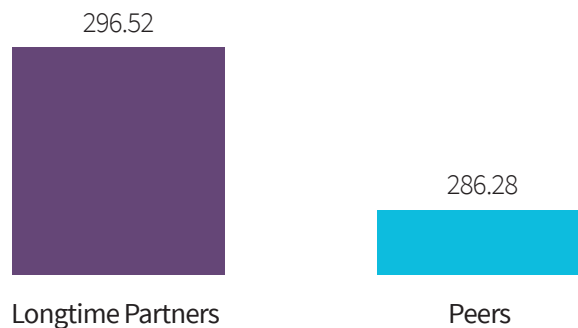


This deferred increase in test scores is likely driven by two factors. First, the transfer of musical training into academic skills is gradual, not instantaneous. Existing research suggests that improvement in language proficiency, literacy, numeracy, creativity, and scholastic achievement are only observable after at least one year of musical training, depending on the skill (Hallam, 2010). Second, it takes time for schools to implement the ETM program to the standard that the organization calls for, as principals, administrators, and classroom teachers adjust to the program, new music teachers get to know their schools and students, and classroom teachers and music teachers build collaborative relationships to enhance learning in all disciplines. Given these explanations for a longer timeline of improvement, it is reasonable to study the effectiveness of ETM programming by narrowing the partner school group to only those with longer partnerships and comparing them to their non-ETM peers.

Students attending longtime ETM partner schools earned higher ELA and Math exam scores compared to students in peer schools

Comparisons of ELA and Math exam scores between longtime partner schools (four or more years) and their peers yielded statistically significant differences in average scores (weighted for school sizes), with partner schools outscoring their peers. The average Math scale score was 3.58% higher (10.26 points) and the average ELA scale score was 2.47% higher (7.08 points) for ETM schools with longtime partnerships as compared to their peers.

Average (Weighted) Math Scale Score: Longtime Partners versus Peers



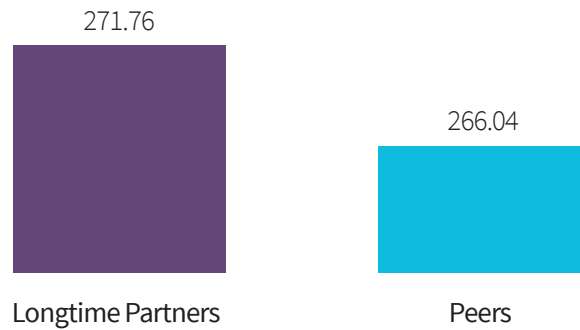
Average (Weighted) ELA Scale Score: Longtime Partners versus Peers



Average Math exam scores among students with disabilities are higher at longtime ETM partner schools than at peer schools

The average Math exam score earned by students with disabilities at longtime partner schools was 2.15% (5.72 points) higher than at peer schools (this difference was significant at the 0.05 level). This disparity suggests that ETM has a broad impact on students regardless of ability.

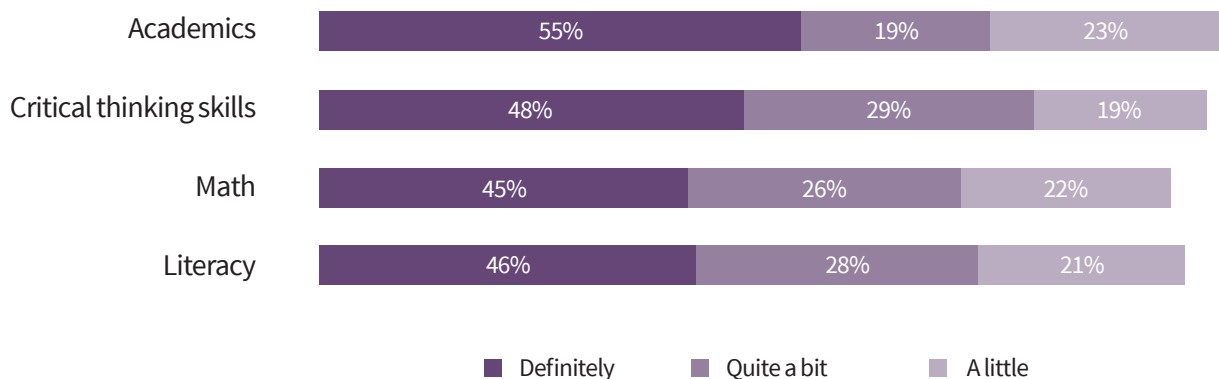
**Average (Weighted) Students with Disabilities' Math Scale Score:
Longtime Partners versus Peers**



ETM students and school personnel perceive the positive effects of ETM on academic achievement

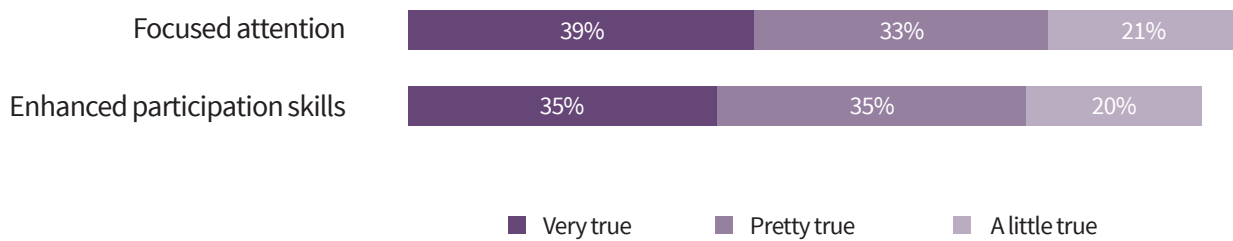
Approximately 95% of classroom teachers agreed that the music program increases students' academic, literacy, math, and critical thinking skills, a finding that is consistent with the academic test score analyses above.

Percentage of classroom teachers who believe that ETM has improved student outcomes in the following domains



Of all 3rd-8th grade students surveyed, 93% reported that the music program has helped to improve their participation skills, and 90% believed that their ability to pay attention had improved as well.

Percentage of students who believe that ETM has increased their development in the following ways



KEY FINDINGS - SOCIAL/EMOTIONAL DEVELOPMENT

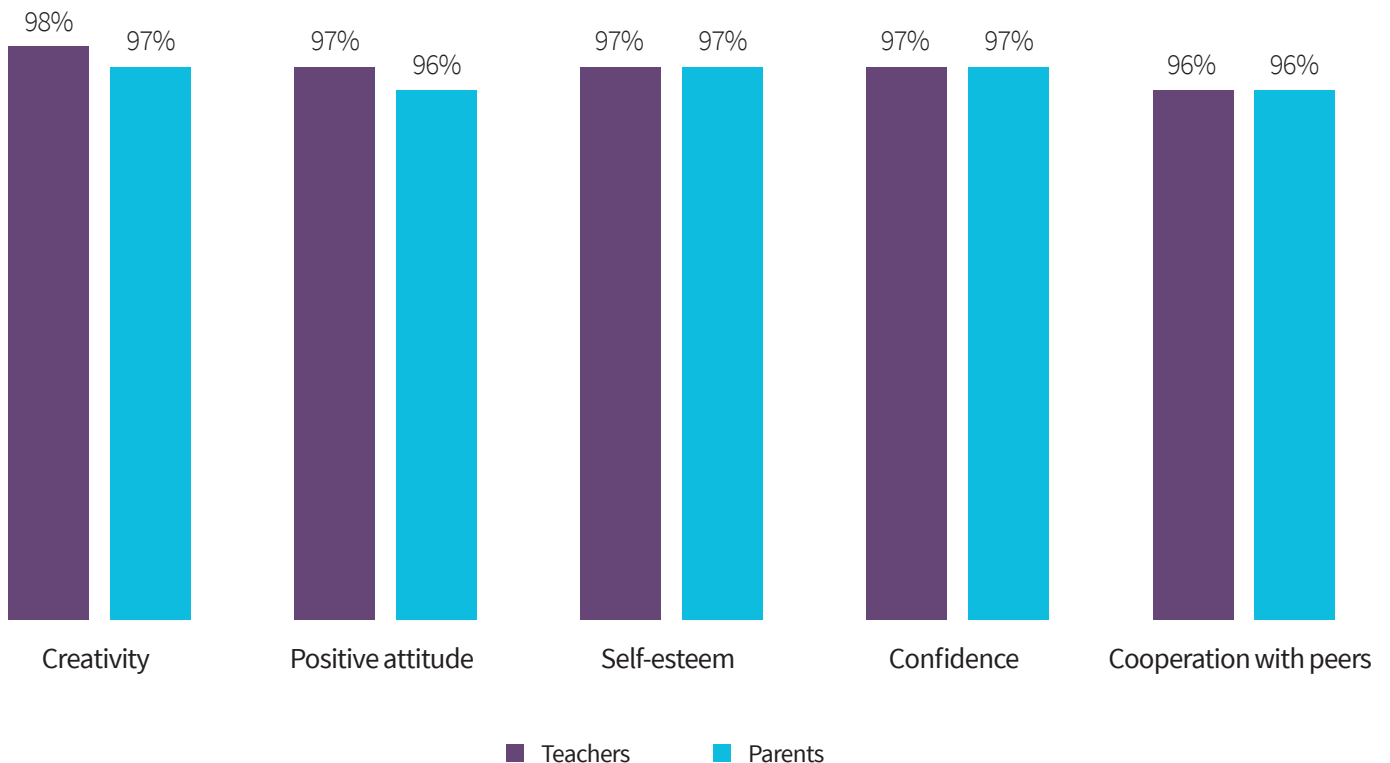
Parents and classroom teachers see the positive effects of ETM’s programs on social/emotional wellbeing

Similar to past ETM evaluation results, classroom teachers and parents perceive the benefits of music education on students’ social/emotional development: approximately 97% of parents and 97% of classroom teachers believe that ETM benefits students in areas such as confidence and positive attitude.

“Some of my students that came into my class with low self-esteem have gotten a lot more confident. During music time they are the ones singing the loudest.”

– ETM partner school teacher

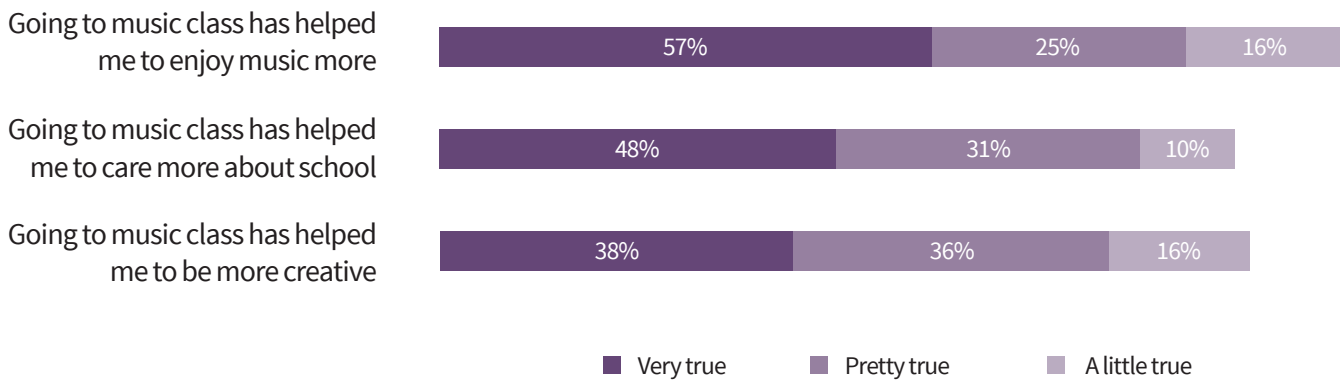
Percentage of parents and classroom teachers who perceive ETM’s positive impact on the following domains



Students perceive positive effects of ETM on several domains of their general development

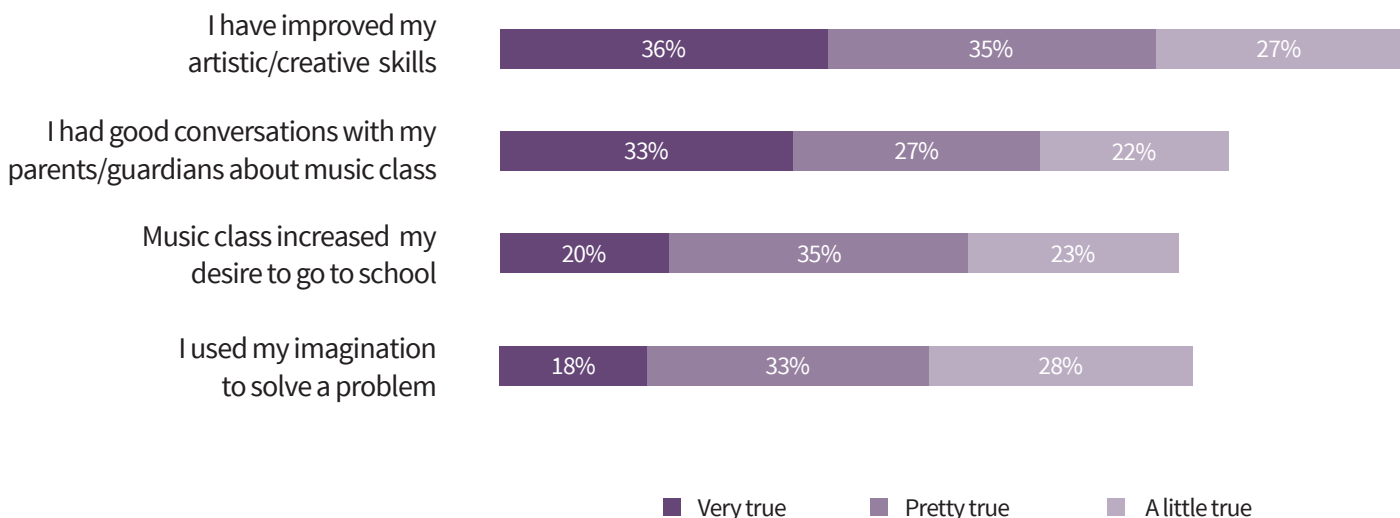
Survey responses of 3rd-5th graders showed that students have noticed that their participation in music class has increased their creativity and interest in music, as well as improved their attitude regarding school.

Percentage of 3rd-5th grade ETM students who report



The vast majority of surveyed middle school students believe that participating in music class helped them to improve their abstract thinking skills, such as those used to creatively solve problems. Students also reported that music class increased their desire to attend school; this finding is particularly noteworthy, as our analyses demonstrated that school attendance was strongly correlated with NYS Math and ELA exam scores.

Percentage of 6th-8th grade ETM students who report



KEY FINDINGS - ETM PROGRAM SATISFACTION

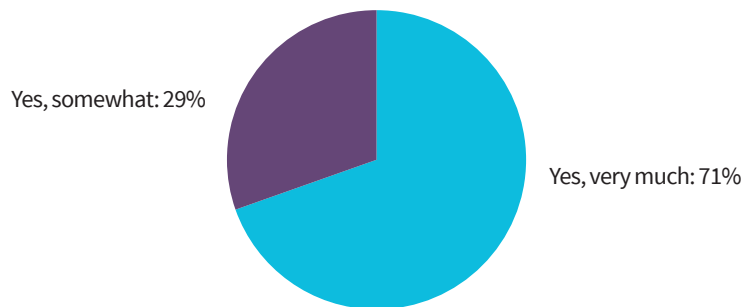
ETM is highly regarded by partner school personnel

For example, 93% of principals at ETM’s partner schools rated ETM as “excellent” in providing and/or supporting a quality music program. Overall, principals were satisfied with ETM’s effectiveness in providing support to principals, mentoring music teachers, and delivering the music program.

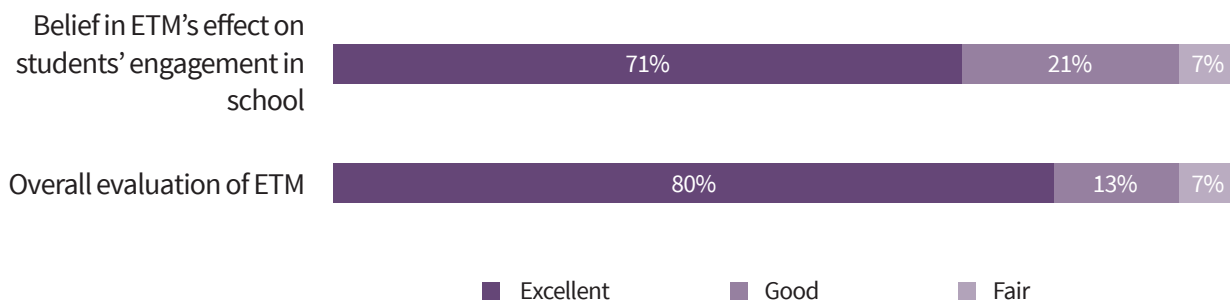
“Thank you for partnering with me. I truly believe in the benefits of the arts for inner-city youngsters. ETM has made my vision a reality and for this I am grateful.”

- ETM partner school principal

Degree to which principals report that ETM was involved with or supported by the community



Principals’ ratings of ETM



CONCLUSION

Based on the findings presented in this report, ETM can say with confidence that it has continued to meet its goals during the 2014-2015 academic year. First, as with years past, there is renewed evidence that the ETM program positively influences students' academic achievement. Thus, students in longtime partner schools earned significantly higher NYS Math and ELA exam scores than students at peer schools, a result that also applies to students with disabilities, who outperformed those at peer schools in Math. Second, students attending ETM partner schools reported healthier social/emotional wellbeing due to their participation in ETM music classes, a result that was echoed by parents and teachers. Third, principals continued to view ETM and its services in a highly favorable light.

Although this year's evaluation project has largely confirmed the findings of the past two years, it unearths new areas of interest for ETM to investigate in the future. In particular, evidence of a timeline in which adoption of the ETM program transfers into observable exam score gains raises important questions about implementation, especially as ETM continues to expand to new schools. Perhaps the most valuable insight from this line of inquiry would be whether any factors within ETM's control play a role in delaying or hastening these observable exam score increases and if ETM could condense this timeline. This topic will likely be revisited in the future.

LOOKING AHEAD

As the longitudinal evaluation project enters its third year of six, ETM has started transitioning into the next phase of the design. While the primary goal of the last two years was to canvass for parental consent for students to be included in the study, ETM has obtained a sufficient number of participants to better focus on follow-up by tracking students through adolescence. By

investing greater energies into this type of data collection, the evaluation enterprise will acquire richer data that will enable a more comprehensive assessment of the impact of ETM programming over time that would complement existing sources of academic and survey data. This change in the methodology should be fruitful within the next two years.

NOTES ON THE ANALYTICAL APPROACH

All survey data for this report were analyzed by calculating means and frequencies for each survey item. NYS Math and ELA exam data were analyzed using scale score means. The NYC DOE tabulates the scale score as a direct reflection of correct and incorrect answers, adjusted to account for changes in tests from year to year and between grade levels, rendering it the ideal exam score statistic for comparative analyses.

The comparison sample of non-ETM peer schools was selected from the NYC DOE peer schools list. According to the NYC DOE, “peer schools are the New York City public schools, of the same school type, with student populations that are most similar to the school across every student characteristic used for peering” (New York City Department of Education, 2014, p. 3). ETM accessed peer school lists for each of its partner schools, and the final sample of non-ETM peer schools consisted of peer schools that were located in the same borough of NYC, served the same grade levels, had never partnered with ETM, and did not offer music classes. The 2014-2015 Arts in Schools Dataset was utilized to determine which schools did not have music education.

Comparative analyses for academic exam scores were based on parametric and nonparametric versions of the *t*-test, a statistical test that compares averages between two groups and assesses the probability of observing a difference in averages when one does not exist. For comparisons between groups of schools, weighted averages were used to compensate for vary-



ing sizes of student bodies at each school. All statistical tests of significance were conducted at the 0.05 level, meaning that for each outcome there was a 5% probability that one could obtain these results if there were no true differences.

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APPENDIX

Appendix A

Demographic comparison: Longitudinal sample versus non-longitudinal partner schools

| | ENI (2012-2013)† | SWD‡ | ELL‡ | Black | Hispanic | Asian | White | Non-White |
|------------------|---------------------|--------|--------|--------|----------|--------|-------|-----------|
| Longitudinal | 0.70* | 18.7%* | 10.3%* | 49.6%* | 38.3%* | 3.7%* | 6.6%* | 93.4% |
| Non-Longitudinal | 0.85* | 17.6%* | 17.5%* | 21.1%* | 56.5%* | 12.6%* | 7.2%* | 92.8% |
| Difference | -0.15 | 1.1% | -7.2% | 28.5% | -18.2% | -8.9% | -0.6% | 0.6% |
| Citywide | 0.71 | 18.2% | 13.1% | 27.8% | 40.4% | 15.3% | 14.7% | 85.3% |

*Significant difference at the 0.05 level

†Economic Need Index (ENI) reflects the socioeconomic background of a school’s student population, as calculated by the DOE. It incorporates the percent of students in temporary housing, the percent eligible for Human Resources Administration (HRA) benefits, and the percent eligible for free/reduced-priced lunch, with a higher score reflecting greater need. The 2012-2013 year was the last cohort for which the DOE calculated each school’s ENI, having since transitioned to a percent poverty statistic. However, ENI is a more rigorous and useful figure, and was thus utilized for these analyses.

‡ SWD = students with disabilities, ELL = English language learners

Based on this data, ETM concluded that the longitudinal sample is sufficiently similar to its non-longitudinal partner schools to treat longitudinal sample results as a bellwether for ETM partner schools. Although the statistically significant differences in economic need index, students with disabilities, English language learners, and

race/ethnicity caution against this, the arithmetic differences are only slight for every demographic category, excluding race/ethnicity. However, differences in the racial/ethnic backgrounds of students are tempered by the nearly identical proportion of Non-White students in longitudinal and non-longitudinal partner schools.

Appendix B

Longitudinal sample demographics

| | | | | | | | | | | | | |
|-------|--------|-------------|-----------------|------|-------|-----------|----------|-------|-------|----------|-----------------|-------|
| Male | Female | In poverty* | Not in poverty* | ELL† | EP† | Spec. Ed. | Gen. Ed. | Asian | Black | Hispanic | Native American | White |
| 45.5% | 54.4% | 61.8% | 38.2% | 4.4% | 95.6% | 11.1% | 88.9% | 4.0% | 56.1% | 33.3% | 1.7% | 4.6% |

* Although ENI is a more rigorous figure of socioeconomic status, the DOE calculates it at the school level. Given that the longitudinal sample is comprised of students, rather than schools, the newer percent poverty statistic is more appropriate here.

† ELL = English language learners, EP = English proficient



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