

Year VIII  
ASSESSMENT REPORT

**New Jersey Symphony Orchestra's**

**EARLY STRINGS  
PROGRAM**

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**Introduction**

The New Jersey Symphony Orchestra's (NJSO) Newark Early Strings Program (NESP) is designed to provide instruction on string instruments for children in grades 2-4. NESP is a comprehensive approach to string training. Students participating in the Program attend the NJSO's Concerts for Young People series and attend small ensemble performances in their schools through the NJSO's REACH program. The stated goals of the Program are to:

- Implement pilot strings programs within selected public schools in Newark, including group violin lessons for students in grades 2 – 4,
- Encourage and nurture the talents of committed students in the second grade and older via participation in the NJSO's school-related performances,
- Improve the overall education of the students,
- Establish and strengthen collaborations between the NJSO and in-school music teachers, and
- Develop and strengthen the relationships between the schools and the community.

NESP seeks to accomplish these goals by providing:

- Training for in-school music teachers, including basic violin technique and a modified Suzuki method of pedagogy,
- Training in a modified Suzuki method of pedagogy for NJSO musicians and Newark Public School music teachers,
- Weekly lessons for students using the modified Suzuki method with school-provided quarter- and half-size violins (these lessons are taught by in-school music teachers),
- Biweekly class lessons with NJSO musicians to reinforce weekly instruction,
- Regular enrichment opportunities via in-school chamber music performances by NJSO string players,
- Annual inter-school *Fiddle Fest* at the New Jersey Performing Arts Center (NJPAC) in the spring, and
- NJSO's *Young People's Concert* and *Spotlight Concerts*, held each fall and spring respectively, at the NJPAC.

The Program has now completed its eighth year of implementation. During the 2007-2008 school year, the Program maintained services for a total of eleven

schools. The documentation study focuses on three participating schools—Franklin School, Quitman School, and Raphael Hernandez School. Second, third, and fourth grade students who began the Program in the second grade continued to receive violin instruction. Many of the students who began the Program two years ago in second grade are continuing instruction as fourth graders. In some schools the Program serves one class of students at each grade level, while at other schools students come from different classrooms within each grade level. During the 2007-2008 school year, there were approximately 800 students participating in the Program.

The evaluation results presented in this report examine several aspects of the Newark Early Strings Program. Specifically, this report focuses on:

- The impact of the Program on second grade students' academic success and their ability to self-regulate,  
  
as well as
- The impact of the Program on the school and community.

During the assessment project, information was gathered from the major participants of NESP listed below:

- Second-grade students are the primary focus of the study. Their responses to the Program and their development as a result of participating in NESP are key to assessing the Program's success.
- Music Teachers and Classroom Teachers are an important source of information regarding several aspects of the Program. Music teachers provide instruction and continuity for the Program. Because of their role in the Newark Early Strings Program and their close contact with the students, both music teachers and classroom teachers were able to provide important information regarding the effectiveness and the success of the Program.
- School Administrators/Leaders have a unique perspective and have an important influence on the Newark Early Strings Program. Their position requires that they support and facilitate NESP activities, and that they assess the impact of the Program on schools.

During the 2007/2008 school the Center for Arts Education Research (CAER) received a grant from the National Association of Music Merchants (NAMM) to support a research/evaluation project with the Early Strings Program. The NAMM support allowed the assessment team to focus more intensely on the second-grade students participating in NESP, particularly focusing on the effect of NESP

experiences on the students' self-regulation. Students are *self-regulated* when they are aware of their own learning processes and can select useful strategies to complete a task (Bandura, 1986; Zimmerman, 1989). Poor self-regulation skills limit learning and achievement. Baum, Owen & Oreck's research demonstrated a relationship between the development of self-regulation in the arts and success in academic areas. They observed that "during arts lessons, students paid attention, followed directions, set goals, and practiced on their own" (p. 35), important qualities of self-regulation and behaviors that are likely supported in NESP lessons. The focus on second grade students sought to gain deeper understanding of data trends observed over the last five years –to enrich the literature on the outcomes of successful music programs. Our focus now has turned to the issue of 'Self-Regulation'; as a potential causal factor, worthy of closer examination.

The assessment team was comprised of three members of the CAER, located at Teachers College, Columbia University. The team has been led by Dr. Hal Abeles, Co-Director of the Center and Professor of Music and Music Education. Dr. Katherine Sinsabaugh, Senior Research Associate at the Center and Emily Ondracek, Research Associate at the Center and doctoral student in Music Education at Teachers College, assisted on the project.

## FINDINGS

Based on the initial goals of Newark Early String Program (NESP), early evaluations focused on whether NESP was reaching its goal of inspiring participating students' to develop an interest in pursuing further music education. The results of this work was published (Abeles, 2004) and clearly demonstrated that students who participated were more likely to consider music as a vocational choice than those who did not participate.

During the next phase of the assessment, evaluators combined an ongoing NESP program assessment with an exploration of its potential impact of the program on academic outcomes. Analysis of achievement test data showed that a higher percentage of NESP students performed at or above proficiency than students in other comparison groups (see Table 1)

**Table 1: Achievement Test Data Results (2002-2007)**

Year/Group	NESP	In-School Comps	Newark	New Jersey
Math: 2002 3 <sup>rd</sup> grade	95%	56%	32%	na
Math: 2005 3 <sup>rd</sup> grade	83%	57%	63%	82%
Math: 2006 3 <sup>rd</sup> grade	92%	83%	69%	87%
Math: 2007 3 <sup>rd</sup> grade	93%	71%	70%	87%
Math: 2003 4 <sup>th</sup> grade	78%	28%	43%	68%
Math: 2004 4 <sup>th</sup> grade	90%	65%	54%	72%
Math: 2005 4 <sup>th</sup> grade	83%	52%	60%	80%
Math: 2006 4 <sup>th</sup> grade	83%	78%	64%	82%
Math: 2007 4 <sup>th</sup> grade	70%	63%	69%	85%
Literacy: 2002 3 <sup>rd</sup> grade	71%	60%	50%	na
Literacy: 2005 3 <sup>rd</sup> grade	84%	62%	58%	83%
Literacy: 2006 3 <sup>rd</sup> grade	93%	84%	58%	82%
Literacy: 2007 3 <sup>rd</sup> grade	86%	57%	63%	83%
Literacy: 2003 4 <sup>th</sup> grade	78%	31%	53%	78%
Literacy: 2004 4 <sup>th</sup> grade	86%	69%	62%	82%
Literacy: 2005 4 <sup>th</sup> grade	87%	36%	61%	82%
Literacy: 2006 4 <sup>th</sup> grade	78%	67%	60%	80%
Literacy: 2007 4 <sup>th</sup> grade	88%	47%	60%	81%
Science: 2006 4 <sup>th</sup> grade	72%	50%	59%	82%
Science: 2007 4 <sup>th</sup> grade	71%	38%	61%	83%

The NESP group in each of the participating schools was typically an existing intact class of students who were then compared with an equal number of randomly selected students from remaining intact classrooms of the same 'grade'. In addition to analyzing year-end achievement test scores, Center for Arts Education Research evaluators observed lessons and performances, and conducted year-end interviews with a range of project stakeholders, such as students, classroom teachers, music teachers, and principals. Classroom teachers reported for example that NESP students *“focus on details, which helps them pay attention to the details in other areas. It helps them a lot in class, for instance, seeing the details in a math problem.*

This section reports the findings of the program evaluation for the 2007-2008 school year. The information upon which the results are based was gathered by the assessment team through observing the Program in action. Our observations included:

1. More than 50 NESP classes led by in-school music teachers and by NJSO-provided instructors, and
2. Student performances.

Throughout the assessment, members of the assessment team have spoken with program participants both informally and formally in structured interviews to better understand the Program. We spoke to:

1. Students participating in the Program,
2. In-school music teachers,
3. Classroom teachers,
4. NJSO-provided instructors, and

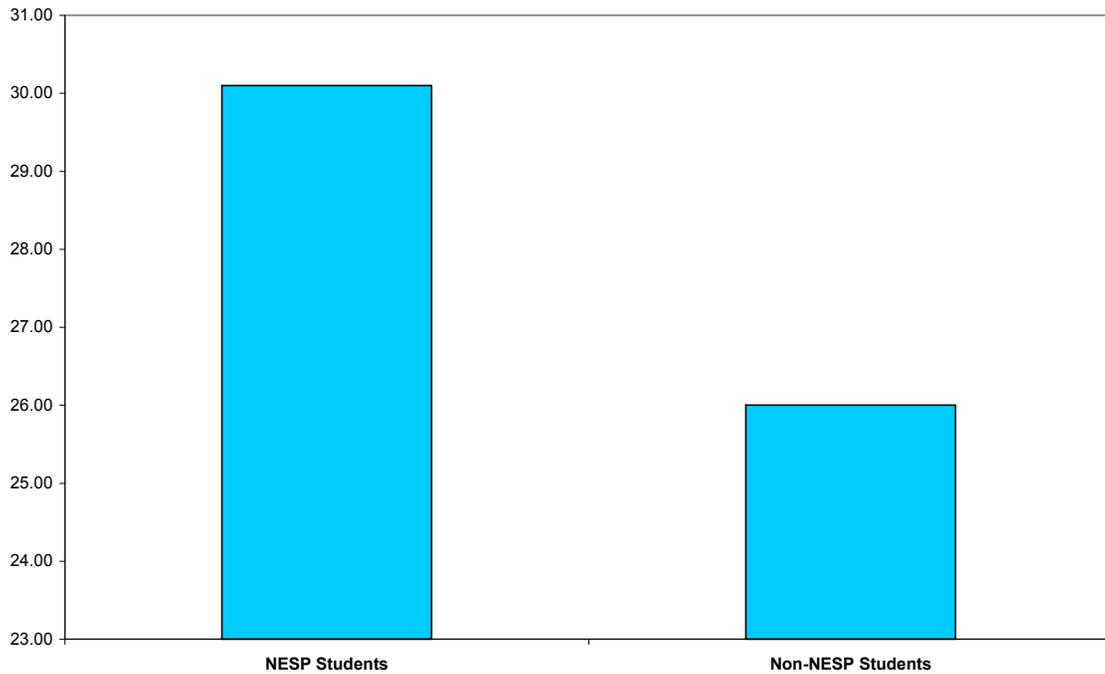
5. Principals and school administrators.

At the beginning and the end of the school year, both NESP and a comparison group of second-grade students were tested on the Developmental Reading Assessment test, a measure of literacy achievement. In previous years, researchers were only able to collect year-end achievement test data. By using a more traditional experimental pretest/posttest design during the 2007/2008 school year, the team from the CAER was able to examine more closely the possible causal relationship between any change in achievement scores and participating in NESP.

**The Impact of the Program on Students**

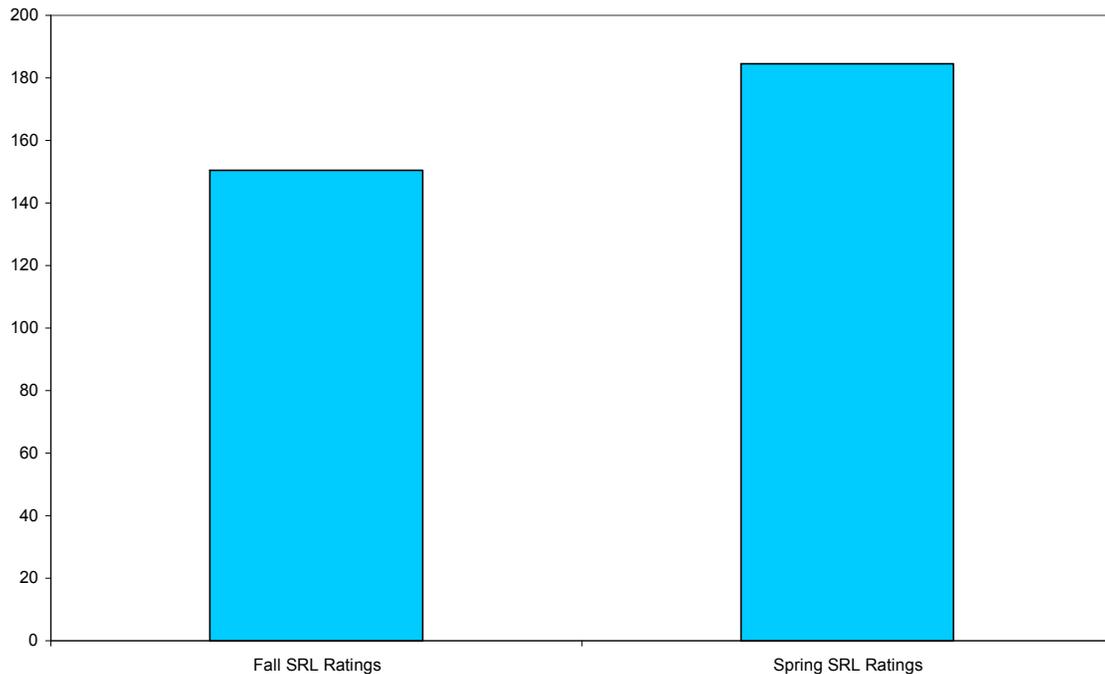
Academic Success, Second Graders' Performance: The assessment initially focused on the question, "Does participating in the NESP program affect students' performance on year-end achievement tests?" Analysis of the DRA scores showed that the second grade NESP students gained statistically significantly more in reading achievement than non-NESP students from the same schools (see Figure 1). This result parallels the results from the past six years of monitoring third- and fourth-grade NESP students' performance on year-end state mastery tests. Consistently, NESP students have outperformed their non-NESP schoolmates on year-end achievement tests. This result, based on gain scores, appears to further cement the relationship between string instruction and academic achievement.

Figure 1



Personal/Social Development, Second Grade Students: The second question the assessment examined was, “Does participating in the NESP program affect students’ self-regulation?” The *Teachers SRL Rating Scale* (see Appendix A) showed that the NESP students made significant gains in their self-regulation during the year (see Figure 2).

Figure 2



The *SRL Student Questionnaire* results showed a decline in self-regulation, although it was not statistically significant. This result appears to be related to the reliability of the student questionnaire. Additional information from student interviews, which has not yet been fully examined, may provide further insight into NESP students' self-regulation.

Academic Success: Standardized test performance: Additional analysis provided a summary of the 2002 to 2007 third and fourth-grade students' performance on the *New Jersey Assessment of Skills and Knowledge 3 and 4* (NJASK3 and NJASK4). The NJASK3 includes subtests in Mathematics and Language Arts, while the NJASK4 includes subtests in Mathematics, Language Arts, and Science.

When averaged across the NESP participating schools for six years of scores (2002-2007), NESP third-graders performed at a higher level than other third-grade students at the same schools. In addition, NESP students at the participating schools performed at a higher level than other third-graders in Newark and New Jersey as well.

The results for third-grade students are presented in Figure 3 and 4. The Figures depict the percentage of students in each group that were assessed as proficient or advanced proficient on the tests.

Figure 3

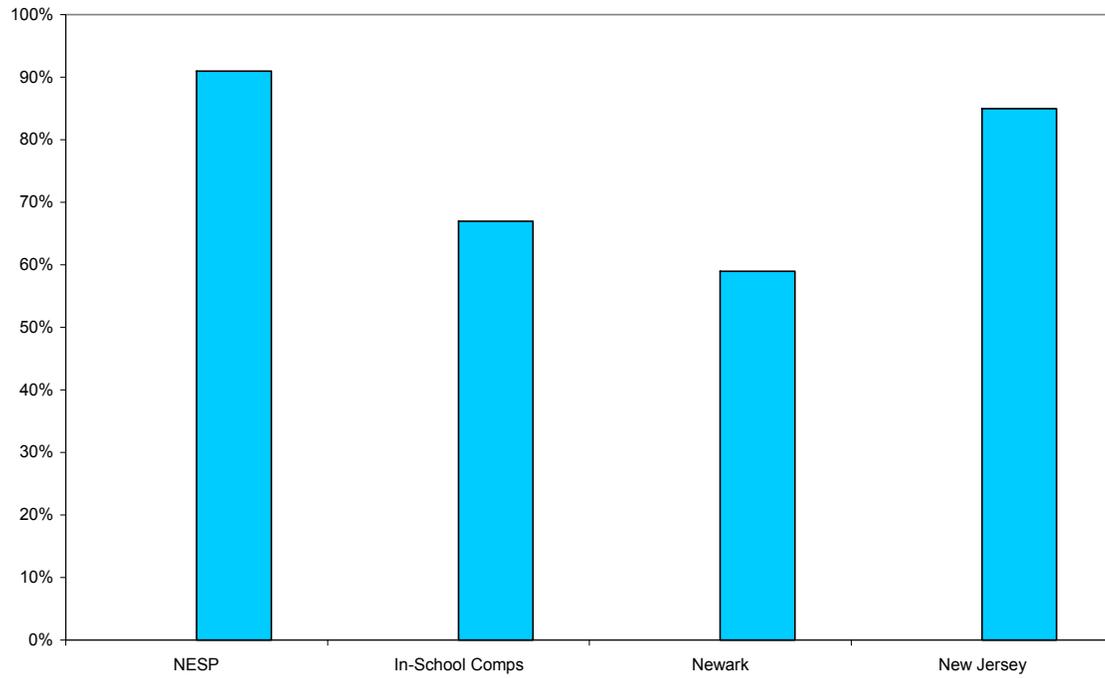
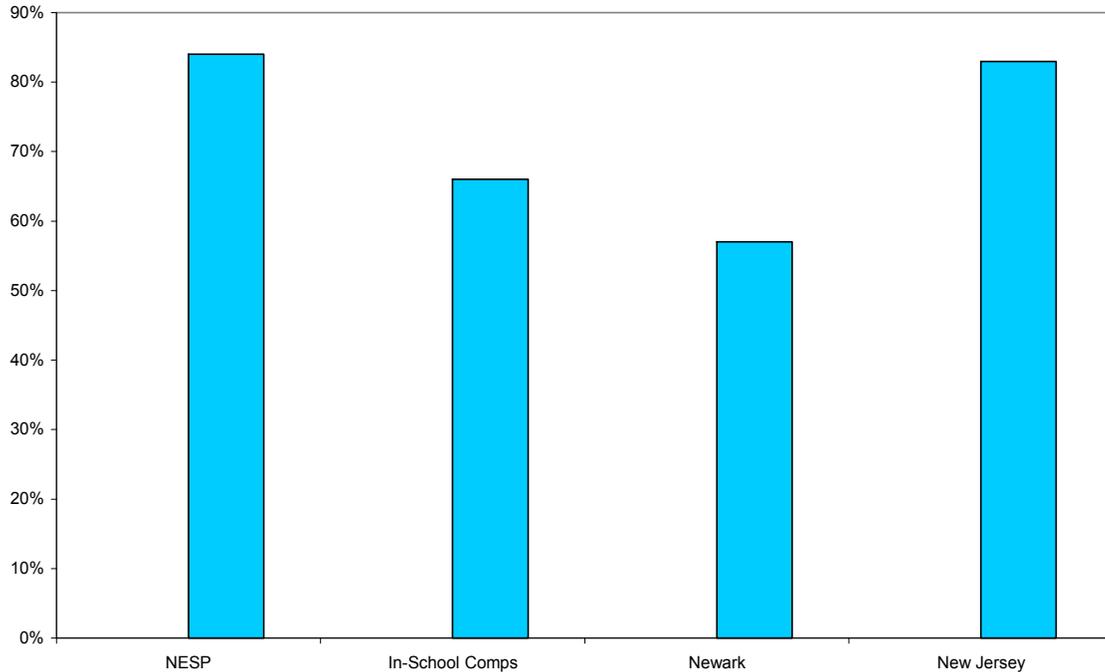


Figure 4



Figures 3 and 4 show that the NESP students achieved higher scores than non-NESP students in both of the proficiency areas. In addition, the results were statistically significant<sup>1</sup>, indicating that the results are not due to chance, and are likely to occur again.

NJASK4 data for fourth graders from 2002 to 2007 were also analyzed. These are presented in Figures 5, 6, and 7<sup>2</sup>.

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<sup>1</sup> Chi-square procedures ( $p < .05$ ) were used for all the statistical analyses in this report.

<sup>2</sup> NJASK Science Tests was given to 4<sup>th</sup> graders only in 2006 and 2007.

Figure 5

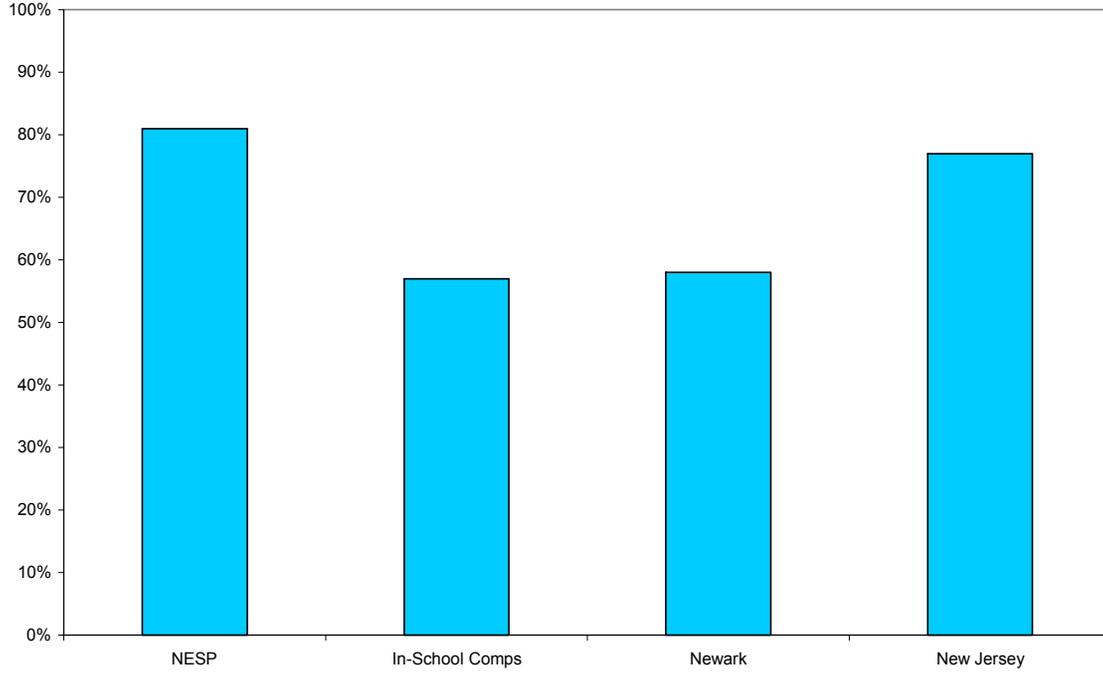
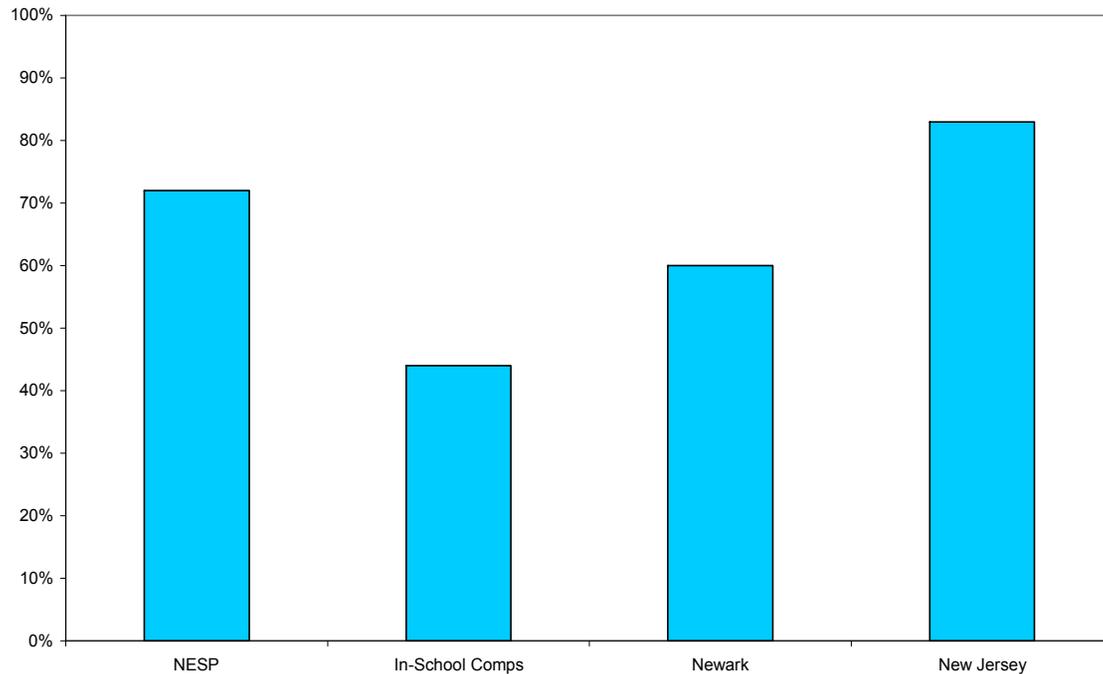


Figure 6



Figure 7



Figures 5, 6, and 7 show that when averaged across the participating schools, NESP fourth-graders consistently performed at a higher level than other fourth-grade students at the same schools and other fourth-graders in Newark. The differences between the NESP students and other fourth graders at their schools for the Math, Language Arts, and Science tests were large enough to be statistically significant.

The NJASK outcomes for third and fourth-graders presented above are not the results of controlled experimental studies and consequently there may be explanations for the differences observed other than participating in NESP. For instance, some of the participating schools use different strategies for assigning students to the Early-Strings Program. One school specifically selects bilingual students to participate in NESP, while in other schools students are assigned in a more random manner. While the strategies employed for initially assigning students may cause some to question the results, the consistent pattern that appears across grades and schools provides some confidence that the effects observed may be “real” effects and consequently, replicable. Over the last six years, each year our analysis has produced a similar pattern of results.

Academic Success: Other evidence. For the last seven years, the teachers and principals we interviewed almost unanimously indicated that the Program has a positive influence on the students' academic work. We continued our interviews this year and recorded similar sentiments. Principals and teachers have seemed to become more confident in their perspectives as data supporting this relationship have been collected. Throughout the seven years of the assessment, teachers and principals have made statements like:

Principals:

*The program has definitely affected their academic work.*

*There is a connection between the participating in the violin program and students' school work.*

*When the children perform they are very independent. They have everything memorized. They are self directed, monitoring themselves.*

*I can see a difference in some of those students who normally would not do well with books.*

*Last year, when we looked at the assessments, it was borne out that the students in the program had higher scores.*

Teachers:

*I would say that students have more discipline and are very ambitious. Whatever they are doing they are very determined to do it perfectly.*

*The children listen carefully. The lessons help them focus.*

*They've made great progress. There is clearly a difference in their school work from the beginning to the end of the year.*

*Most of them have been in violin since the second grade. They are the most advanced proficient in math.*

Personal/social characteristics that contribute to academic success: Several studies suggest that certain personal or social characteristics positively affect students' academic performances. For instance, characteristics such as the ability to concentrate, the capacity to cooperate with others, and self-confidence have been shown to be positively related to school performance (i.e., higher self-confidence leads to higher grades). In addition, other studies (e.g., Burton,

Horowitz, & Abeles, 2000; Heath, 1998) conclude that participation in the arts has a positive influence on these characteristics. Throughout the assessment, interviews with principals, teachers, and students revealed considerable support for the notion that participating in NESP has a positive effect on these enabling characteristics.

Principals and teachers stated that the Program had positive effects on students' self-esteem and self-discipline. They told us:

Principals:

*I think that the kids have gained self-responsibility and maturity and it has affected their self-esteem and self-confidence. The third-year students are in a role model position for the first and second year students.*

*The program has really helped their self-esteem. They are very confident when they are playing on stage.*

*The children take pride in learning the instrument. They help each other, cooperative learning.*

*The fourth graders are doing very well. They just played at NJPAC. The kids were bursting with pride.*

Teachers:

*The students seem more confident, both academically and socially. They have a better work ethic and are more interested in succeeding in class.*

*The program gives more responsibility to children. I assign a captain of each violin class. We expect them to lead and they will succeed.*

*The students beam with confidence when they play.*

*It helped me understand that there are multiple sides of the children. I see things that I don't see here in the classroom. They might be shy in the classroom, but when you see them on stage, they are very confident.*

Students expressed their perspective with statements like:

*Playing became easier. I feel more confident.*

*It is much less scary to stand up in front on stage.*

*Playing the violin is really a good way to take away all your hard feelings. It soothes you a lot.*

*When we went in NJPAC we played with other violinists and got to make music with friends that we didn't know.*

### The Impact of the Program on the School/Community

NESP has had effects beyond the particular children served. While each of the schools reported high levels of parent participation in the schools, as a result of NESP parents appear to have developed even closer contact with the participating schools. We asked principals and teachers to comment on this aspect of the Program. Principals and teachers throughout the period of the assessment project have been unanimous in citing increased parental involvement with the school as a positive outcome of NESP.

#### Principals:

*It has impacted our teachers. They have a deeper appreciation for how the arts can play import roles in the development of our students.*

*The parents are very supportive. When the students go to a performance the parents all want to go.*

*When we have an evening meeting for parents, if the children are playing our attendance at the meeting doubles!*

*Parents love it. They are very supportive. 99% of the parents came to support the NJPAC performances. They make an effort to make sure that their children are there for extra practice sessions before or after school.*

#### Teachers:

*Sixty parents attended the school performance.*

*One father, whose daughter wasn't able to participate, bought a violin for her so she could be in the program.*

*One parent told me, "When I heard them play it made me cry".*

## **SUMMARY**

Based on our analysis of the information gathered from the participating schools in the 2007-2008 school year and in previous years, the Program is meeting several of its stated goals:

- The Program has successfully implemented strings programs in an increasing number of public schools in Newark, and is providing group violin lessons for students.
- The Program, through a variety of activities, has nurtured the musical talents of second through fourth grade students.
- In each of the years standardized proficiency test scores have been examined, the assessment team found that NESP students out-performed non-NESP students on these tests. While the evidence continues to show consistent results, this finding cannot be considered a direct effect of participating in the Program because the data were not the result of a carefully designed experimental study.
- The Program has been able to establish and strengthen collaborations between the NJSO and in-school music teachers.

In addition, most principals and teachers at participating schools appear convinced that the Program has had a positive effect on students' self-esteem and self-discipline. The Program has increased parental involvement in participating schools.

Based upon the evaluation undertaken by the assessment team during the first seven years of the Program, it seems clear that the continuation of NESP should be supported. Program administrators should strive to see that the Program is fully implemented in each of the schools, and consideration should be given to expanding NESP to serve additional students in Newark and other area schools. When we spoke with teachers and principals about organizational issues related to the NESP, they consistently asked for more frequent lessons and smaller group lessons for their students.

It is important to underscore the comprehensive nature of the Program. Students participating in the Program attend the NJSO's Concerts for Young People series and attend small ensemble performances in their schools through the NJSO's REACH program. Our conversations with students reflected the importance of all of the components of the Program in the overall impact reported above. The assessment team continues to monitor the Program.

