

2004-05 NJSO Report

Year V
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 1-4. The stated goals of the Program are to:

- Implement pilot string programs within selected public schools in Newark, including group violin lessons for students in grades 1- 4,
- Encourage and nurture the talents of committed students in the first 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,
- 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 (NJ PAC) in the spring, and
- NJSO's *Young People's Concert* and *Spotlight Concerts*, held each fall and spring respectively, at the NJ PAC.

The Program has now completed its fifth year of implementation. During the 2004-2005 school year, the Program expanded to serve a total of ten schools. The documentation study continues to focus on the five original pilot schools--Ann Street School, Franklin School, Clinton Avenue School, Elliott Street School, and Harriet Tubman School. Second, third, and fourth grade students who began the Program in the first and second grades, respectively, 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. New groups of first and second grade students began instruction this year. 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. Currently, there are approximately 450 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 students' academic success, personal/social development (e.g., self-confidence), and vocational interest and
- 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:

- Students are the focus of the study. Their responses to the Program and their development as a result of participating in NESP are key.
- 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.
- NJSO Instructors have key roles in the Newark Early Strings Program. Most importantly, they develop instructional experiences and provide performance opportunities for students.
- Newark Early Strings Program Administrators, because of their close contact with all of the essential components of the Program, are an important source of information for this report.

Since the 2001-2002 school year, the assessment team has been comprised of two members of the Center for Arts Education Research (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. Edel Sanders, Research Associate at the Center and graduate student in Music Education at Teachers College, assisted on the project.

FINDINGS

This section summarizes the findings of the program evaluation for the 2004-2005 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. 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.

Third and fourth-grade student performance on the New Jersey Assessment of Skills and Knowledge (NJASK) in Mathematics and Language Arts and second grade students' scores on the Developmental Reading Assessment (DRA) were evaluated for the 2004-2005 school year. In addition, two inventories were administered to assess the self-confidence and vocational interests of participating students.

The Impact of the Program on Students

During the 2004-2005 school year, the assessment project continued to focus on academic success and on factors that may contribute to the academic success of students participating in NESP. Information regarding academic success and personal/social characteristics of students was gathered from classroom teachers, principals, in-school music teachers and students, as well as from data provided by school administrators.

Academic Success: Standardized test performance. Our analysis focused primarily on fourth-grade students' performance on the New Jersey Assessment of Skills and

Knowledge 4 (NJASK4) in Mathematics and Language Arts, which they completed in the spring of 2004. When averaged across the five participating schools, NESP fourth-graders performed at a higher level than other fourth-grade students at the same schools and NESP students at the participating schools performed at a higher level than other fourth-graders in Newark and New Jersey as well. This pattern of NESP participants out-performing other fourth-grade students on both NJASK4 subtests was consistent at each of the participating schools.

For this report, administrators at the five participating schools provided data for students at their schools to assist the assessment team in analyzing the results of standardized test scores for students participating in the Program. The data provided by the schools were for different grades at different schools partly because the NESP program is implemented at different grades in some schools. Each school provided scores for both NESP students and randomly selected comparison students at the same grade level. The results for fourth-grade students are presented in Figure 1.

Figure 1

Fourth-Grade Proficient Test Score Comparisons 2005

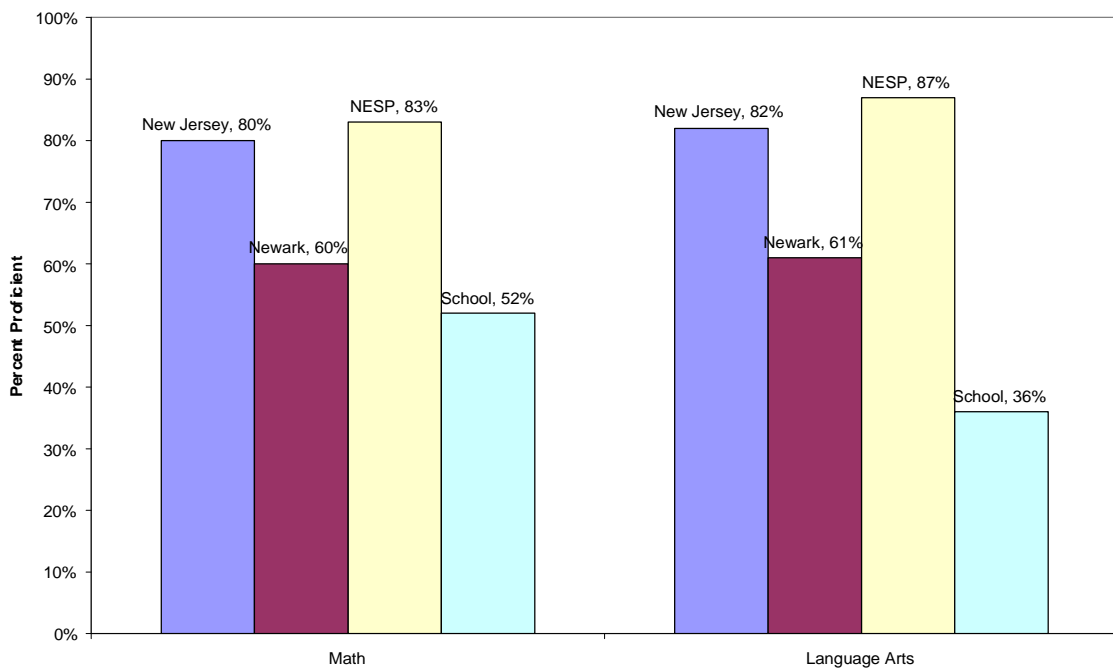


Figure 1 shows that the NESP students achieved higher scores than non-NESP students in both of the proficiency areas. In addition, the results were statistically significant¹, indicating that the results are not due to chance, and are likely to occur again.

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

NJASK3 data for third graders were obtained from four of the schools. These are presented in Figure 2.

Figure 2

Third-Grade Proficiency Test Comparisons 2005

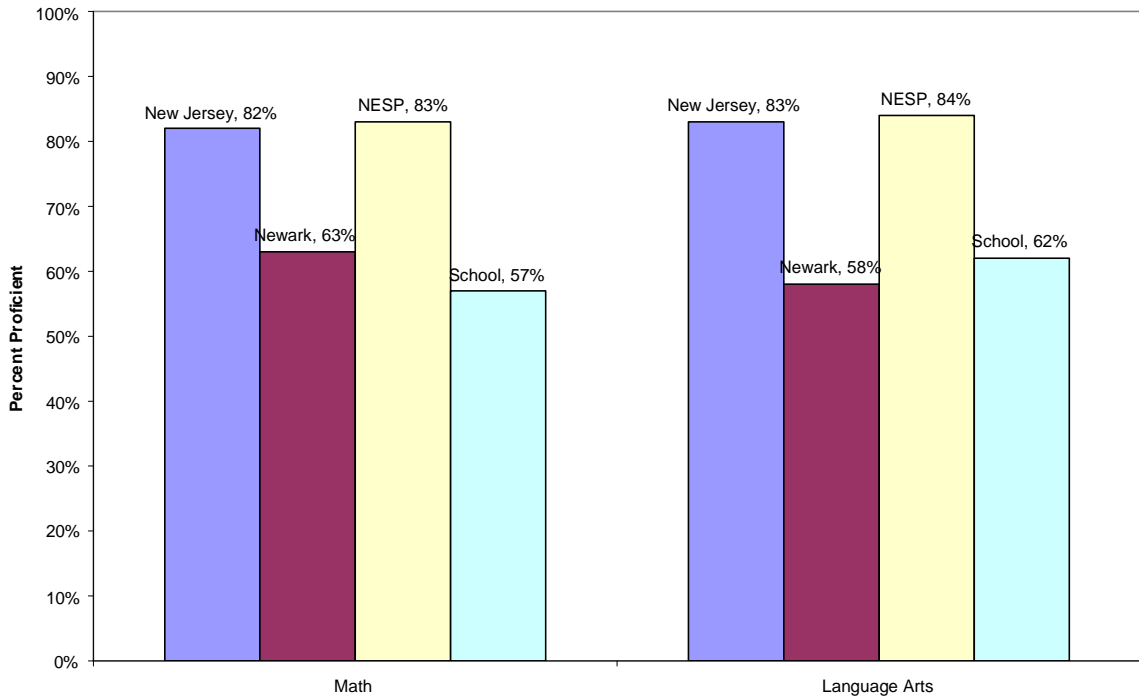


Figure 2 shows when averaged across the four participating schools, NESP third-graders performed at a higher level than other third-grade students at the same schools and NESP students at the participating schools performed at a higher level than other third-graders in Newark and New Jersey as well. The differences for both the Language Arts and Math tests were large enough to be statistically significant .

Language Arts scores for second graders were provided by four of the five schools based on the Developmental Reading Assessment (DRA). These appear in Figure 3.

Figure 3

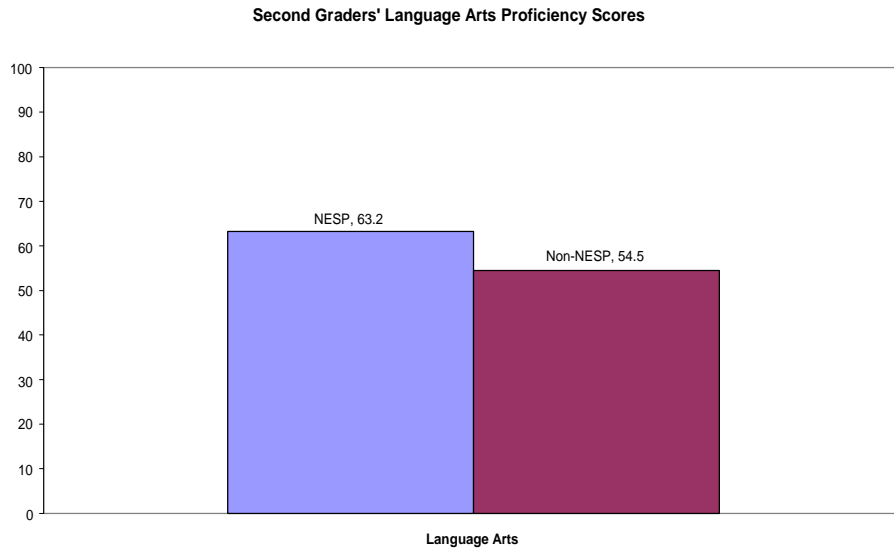


Figure 3 shows that the NESP second grade students received higher scores than non-NESP students on the DRA tests. (DRA test scores averages for Newark or for the State of New Jersey are not readily available for comparisons.)

The outcomes 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. In each of the last four years, our analysis has produced a similar pattern of results.

Academic Success: Other evidence. For the last five 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 continued to become more confident in their perspectives as data supporting this relationship has been collected. Throughout the five years of the assessment, teachers and principals have made statements like:

Principals:

The violin students stand out on the test data. Middle school principals want these kids!

The children are more disciplined as a result of having to practice. And it is reflected in their academics.

Yes, I've seen transfer effects. The majority of the students in the Program overachieve.

Our third graders scored extremely high on their mastery tests. Definitely, it had an effect on their academics.

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

Teachers:

When the children listen to a recording of their playing, they focus on details and it helps them pay attention to the details in other areas. When I ask their classroom teacher, she reports that it helps them a lot in class, for instance, seeing the details in a math problem.

It (the program) enriches their lives. It has had a positive effect on their reading. Their vocabulary has definitely increased.

I noticed a difference in concentration. We randomly selected kids and I noticed that it helped in all areas.

I have seen positive changes... socially, academically and emotionally. They've had a lot of extra attention. They follow through better... because of the training and discipline they got in the Strings Program. Practicing is a discipline; making sure things are right and perfecting. It has transferred over in terms of their focusing, etc.

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 have all these opportunities to play for others. They are very confident when they are playing on stage.

NESP students are looked up to by both students and teachers at the school. It has really affected their self-esteem. It's cool to carry a violin case around the school. They are held in awe because of what they are able to do and what they sound like.

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

Teachers:

The children are very excited. Attendance has improved when they know they are going to perform in front of an audience. You could see their excitement. They enjoy being up on stage performing.

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

Some students who are shy and quiet do much better in a performance situation. Confidence comes out with the violin.

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:

It helps you learn a lot of stuff. It makes you feel good.

It changed our lives. Before we had nothing to do and now we come to school and we have something to do and it's fun.

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

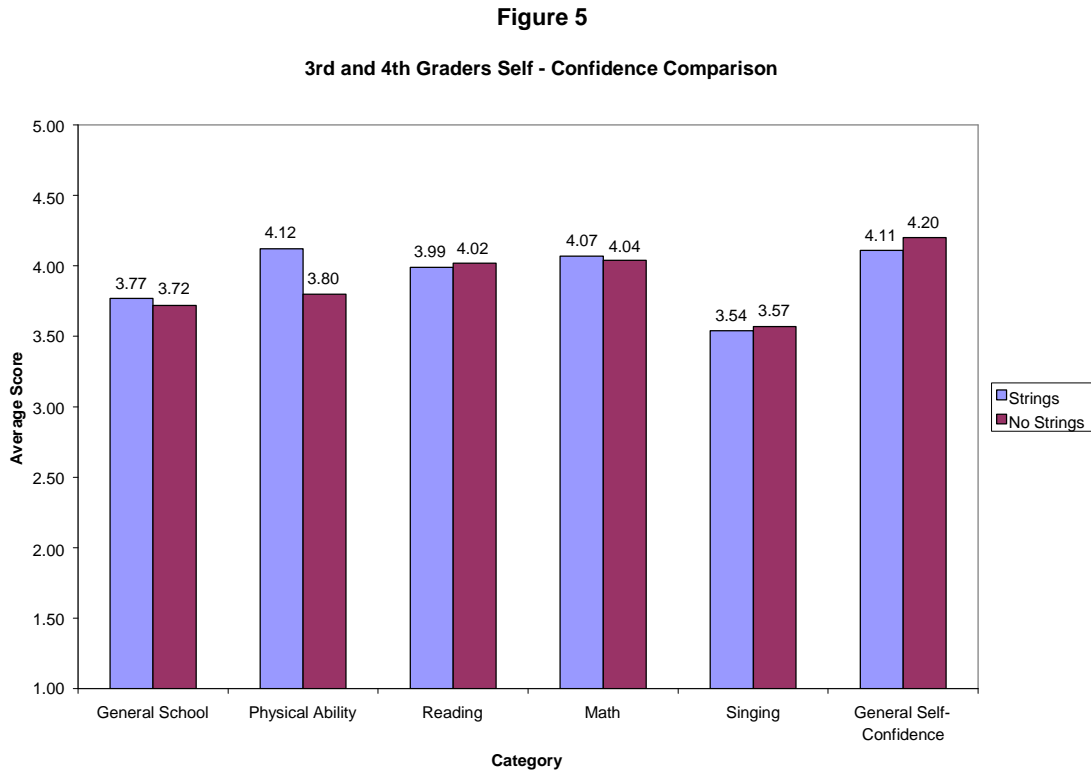
To better understand the effect of the Program on participating students the assessment team administered a self-concept questionnaire both to students participating in the Early Strings Program and to non-participating students at the same school. Selected students in grades one through four were given a modified version of the *Self-Description Questionnaire (SDQ-I)* in the spring of 2005.

The SDQ-I is based on a hierarchical model of self-concept developed by Shavelson (Shavelson, Hubner, & Stanton, 1976) and provides data on several areas of both academic and non-academic self-concept. Given the focus of this project, an additional singing self-concept subscale, developed by the assessment team, was added to the other academic self-concept subscales. The modified SDQ-I included six self-concept subscales: General School, Physical Ability, Reading, Math, Singing, and General Self-Confidence. Previous research has shown that academic self-concept is associated with academic achievement (Marsh, Byrne, & Shavelson, 1988) and may influence academic achievement (Marsh, 1990).

The modified SDQ-I was administered by teachers in the Newark elementary schools. For comparison purposes, data were gathered from students at the same schools who were not enrolled in the strings program. The scores from these non-strings students were also included in our analysis.

Four of the five schools participating in the Early Strings Program returned the SDQ-I forms. An examination of the completed forms showed that first and second grade students responded somewhat randomly to the questions, indicating to the assessment team that the SDQ-I scores were not reliable for these younger students. Analysis proceeded with forms completed by third and fourth grade students. The SDQ-I was completed by 87 third and fourth grade students participating in the Early Strings Program and 92 third and fourth

graders at the same schools who were not participating in the Program. Figure 5 presents the results of the analysis of the SDQ-I scores.



The results of our statistical analysis indicate that the differences on the six different self-concept scales between the two groups are very small. On some of the scales, strings students have slightly higher averages than the non-strings students. On other scales, the average for the non-strings students is higher. When analyzed statistically (analysis of variance procedures were employed), the results were not statistically significant. This means that the small differences reported are likely due to chance and would likely not be replicated with other samples of students with similar experiences.

Some previous studies cited earlier (e.g., Burton, Horowitz, and Abeles, 1999) have found that students with strong arts experiences have higher self-concepts; however, most of those studies were done with somewhat older students (e.g., 4th through 8th graders). While measures like the SDQ-I are designed to be used with children as young as second grade, traits like self-concept are likely to become more stable as children mature. The age of the students who participated in this assessment may account for the differences between the results obtained with the NESP students and the results reported in previous studies.

Vocational Interest. One of the goals of New Jersey Symphony Orchestra's *Early Strings Program* is to affect students' interest in playing musical instruments. To supplement information regarding students' enrollment in instrumental music, second through fourth grade students in five of the participating schools were administered the Vocational Choice Scale (VCS) developed by Cuiettia (1995) for use in assessing children's interest in different vocations.

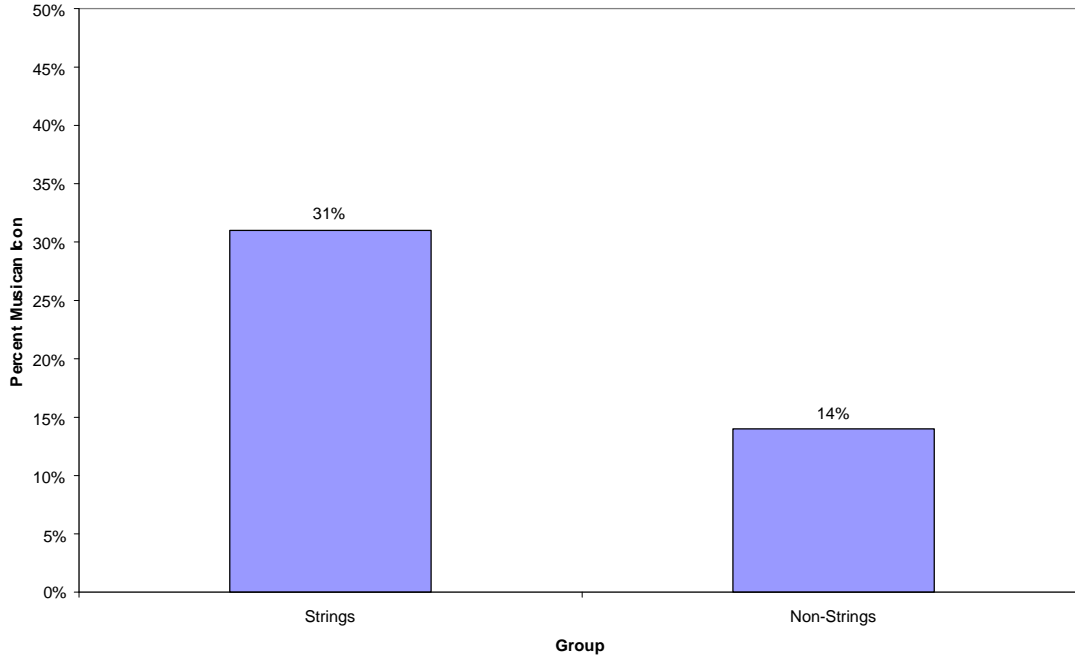
The original VCS was slightly modified for use in the current evaluation in an effort to eliminate sex stereotyping of certain professions and better represent ethnic diversity. The modified VCS included icons and titles for 20 vocations that are randomly ordered on the form. They include professions such as Teacher, Doctor, and Lawyer, occupations like Basketball Player and Car Mechanic, and President. Music, which was represented by three icons, was the only profession represented more than once. Directions for the VCS ask the students to circle a boy or girl icon, and then to complete the sentence "When I grow up I would like to be:" by circling any three icons of the twenty represented on the page.

The VCS was administered by teachers in the Newark elementary schools. For comparison purposes, data were gathered from students at the same schools who were not enrolled in the strings program. The scores from these non-strings students were also included in our analysis.

Five of the schools participating in the Early Strings Program returned the VCS forms. The VCS was completed by 113 students participating in the Early Strings Program and 117 students at the same schools who were not participating in the Program. A total of 35 of the 113 string students (31%) selected a musician icon on their VCS form, while only 16 students of the 117 non-string students from the same schools (14%) selected musician on their VCS forms (see Figure 4). The purpose of this assessment was to examine whether differences would be observed in the frequency that Musician was chosen, and the differences between the frequencies of Musician selections for the students in the two groups (strings/non-strings) were subjected to a test of statistical significance. A Chi-square test of statistical significance was calculated. The result revealed that there was a statistically significant difference (Chi-square = 9.97, $p < .01$) between the two groups in the frequency with which the students selected Musician on the VCS.

Figure 4

Vocational Interest Comparison



The results of our statistical analysis indicate that the pattern of differences between the two groups was significantly different. This means that the results are not likely due to chance but are real differences, differences that would likely be replicated with other samples of students with similar experiences. Caution should be taken when interpreting these results though, as not all of the students in the Program participated in this survey.

Children at this age tend to choose vocations that they are exposed to or are familiar with. Thus, it should not be surprising that their most frequent choices were Parents, Teachers, Basketball Players, and Doctors. This interpretation also seems to help explain the significant differences in the frequency of Music vocational choices found between the students who were involved with the Early Strings Program and the students who were not participating in the Program. While both groups of students receive school-based music instruction, strings students were learning to play the violin with support of the NJSO Program.

It is unlikely that these indications of vocational interest are very stable or predictive. It is likely that as these children grow they will be exposed to a wider range of vocational choices, and eventually narrow their choices based on both school and life experiences. Nevertheless, this interest in music as a vocation would likely not be present if it was not for the NJSO program. And because the

Program serves inner city minority students, this interest may have the potential, if nurtured through the continued opportunity to play instruments in a school-based instrumental music program, to increase the diversity of America's symphony orchestras.

The Impact of the Program on the School/Community

It seems clear that NESP has had effects beyond the particular children served. Parents appear to have developed closer contact with the participating schools. We asked principals at the participating schools 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:

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

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 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, the Program is meeting several of its stated goals:

- The Program has successfully implemented pilot string 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 first 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, although this perspective was not supported by inventory-based data. Vocational preference data collected show the Program appears to influence students' consideration of music as a vocational option. The Program does appear to increase parental involvement in participating schools.

Based upon the evaluation undertaken by the assessment team during the first five 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. The assessment team continues to monitor the Program. Planning is underway to continue to monitor the impact of the Program on student performance on standardized achievement measures and on personal/social characteristics.