

**CULTURAL COUNTERPOINTS:  
Examining the Musical Interactions between the U.S. and Latin America**



**Campe, Katherine L. and Kaufman, Brian L. (Harvard Graduate School of  
Education, Cambridge / El Sistema Curriculum Development, Boston):  
“How does a Latin American Music Initiative impact an American Charter  
School Community? Observations from El Sistema Boston”**

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Self-regulation, motivation, peer-respect and responsibility are the skills and behaviors that were of interest and markers for cognitive, emotional and social development beyond academic achievement. We observed and collected perceptions of social and behavioral changes in students and assessed the potential positive musical influence of El Sistema through a qualitative and quantitative music literacy test. In our observations, the El Sistema curriculum has been perceived as a positive influence on the students' social and behavioral development. Participating in the program provides students with valuable social interactions, enabling them to engage in collaborative learning, as well as propelling their musical knowledge. Further assessment will determine the El Sistema curriculum's impact outside of the music classroom. Through further observation of El Sistema programs throughout the U.S., we can observe and acknowledge the large scale impact of this Latin American music initiative in our country.

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**Editorial Disclaimer:**

This paper was presented at the Latin American Music Center's Fiftieth-Anniversary Conference titled “Cultural Counterpoints: Examining the Musical Interactions between the U.S. and Latin America,” Indiana University, Bloomington, October 19-23, 2011, and was accepted on the basis

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of its abstract, which was peer-reviewed. This paper is presented as submitted by the author, who has authorized its dissemination through *IUScholarWorks*.

# How does a Latin American Music Initiative impact an American Charter School Community? Observations from El Sistema Boston

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## **Abstract**

*Rooted in Venezuela, El Sistema is a visionary global movement that has transformed the lives of youth through music since 1975. A Boston public charter school restructured and invigorated its' curriculum with the El Sistema music program in September 2010. The pedagogical focus of El Sistema is the orchestra, a model for an ideal community that advances the social and performance skills of students empowering their personal and musical development. Our project aimed to assess the impact of El Sistema, a Latin American education initiative, on an American urban charter school.*

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## **1. Introduction**

### **El Sistema: From Background to Boston**

Founded in Venezuela in 1975, by Dr. Jose Antonio Abreu, El Sistema is a social music program that serves youth and communities in need. Beginning with a small group of eleven children, the program now serves over 300,000 children in Venezuela. Participants at El Sistema centers, also called núcleos, voluntarily attend classes for three to six hours a day, up to six days a week. Centered on the orchestra, a model for the perfect society, El Sistema provides students

opportunities for group learning, peer teaching, personal growth and leadership. “Mutual struggle and celebration both require group interaction,...students must learn and contribute simultaneously; they receive immediate, practical support from their peers while confronting challenges as a team, and must build and model the cooperative attributes of a healthy symbiotic community in order to achieve success.” (Govias, 2011, pg. 22)

According to Dr. Jonathan Govias, El Sistema operates with 5 basic principles:

1. Social Change: The primary objective is social transformation *through* the pursuit of musical excellence. One happens through the other, and neither is prioritized at the expense of the other.
2. Ensembles: The focus of *El Sistema* is the orchestra or choral experience.
3. Frequency: *El Sistema* ensembles meet multiple times every week over extended periods.
4. Accessibility: *El Sistema* programs are free, and are not selective in admission.
5. Connectivity: Every *núcleo* is linked at the urban, regional and national levels, forming a cohesive network of services and opportunities for students across the country. (Govias, 2011, pg.21)

After twenty-six years, Venezuela has established over sixty children’s orchestras, almost two hundred youth orchestras, thirty professional adult orchestras and dozens of choruses (El Sistema USA, 2011). The curriculum is largely repertoire focused, with classical masterworks being performed at all levels. Students begin their studies singing and playing by ear, and overtime eventually learn to read standard notation. Each week students participate in ensembles, sectionals and private lessons. Regular performances are also a key aspect of the program; frequently performing for audiences and peers results in increased comfort and confidence in performance. Though El Sistema has a national curriculum including an established musical learning sequence, each *núcleo* has customized the curriculum to their local community. Best practices can then be transferred to other *núcleos*, allowing for and encouraging constant

adaptation and improvement. So far, the program has made a global impact, with núcleos being founded in over twenty-five countries.

While music is the core material, El Sistema puts children first. The philosophy of the program is driven to create a safe, supportive and challenging environment for students to learn and interact. El Sistema has been perceived to build a sense of capability, endurance and resilience in students. In Venezuela this has resulted in numerous positive social outcomes; El Sistema participants are 20% less likely to drop out of school, 28% more likely to be employed and 22% more likely to participate in community activities (Cuesta et al., 2007). El Sistema arrived in Boston in the fall of 2010. The directors, trained in the Abreu Fellows program at the New England Conservatory, recruited fourteen resident artists to assist them in establishing El Sistema at a Boston elementary charter school. This Boston public charter was founded with the mission of providing quality music instruction to their students. Previous to El Sistema, all students in grades one through five studied violin in group lessons once or twice a week and took a weekly general music class. Beginning in the 2010-2011 school year, 156 students were welcomed into the first El Sistema Boston núcleo.

On the whole, the El Sistema Boston program aligns with Dr. Govias's five principles. Social change grounds El Sistema Boston with a sense of purpose, the orchestra remains the central ensemble of the program, and an international network of programs connects El Sistema Boston to núcleos in the United States and beyond. However, since the nature of El Sistema is to adapt to its local community, there are some differences in El Sistema Boston's first núcleo. For example, the Venezuelan curriculum is specifically focused on repertoire. An appropriate level piece will be chosen for a particular group and then teachers and students will work rigorously to be able to perform that work. While repertoire certainly drives the curriculum at El Sistema Boston, music literacy fuels it. The use of Solfege, aural skill training, and theoretical understanding are all integral parts of the curriculum specifically developed by the resident artists in Boston. Another difference lies in the frequency and accessibility of the El Sistema Boston program. In Venezuela, El Sistema is a volunteer, after school program. In Boston, El Sistema is an integrated part of the school day, compulsory for all students in the school. Since El Sistema Boston operates within a charter school, families must apply for their children to be able to attend; students are chosen by a lottery system. The school attracts students from all over Boston--over 75% of which are from low income families.

## **Assessment: Music and Development**

In 1983, the publishing of *Frames of Mind: A Theory of Multiple Intelligences* by Howard Gardner, gave music educators and researchers something to think about. By recognizing music as one of the key intelligences, believed to be innate in every individual, the theory has been used to back campaigns against removing music programs from schools. It has also helped to integrate new curricula (such as El Sistema) in high need areas, as well as generating an immense amount of research involving how music affects child development (Črnčec, Wilson, & Prior, 2006).

In attempting to understand the entire picture of how musical training can affect children in their schooling and beyond, research has begun to focus on the neural and large cognitive changes that music is seen to have influence on the brain. In two studies completed at the Music and Neuroimaging Lab in Boston, experiences with musical training early in a child's life was linked to enhanced skills in verbal ability and non verbal reasoning ( Schlaug, et al. 2005, and Forgeard, et al. 2008). An important note to remember through all of this research regarding the child's brain is the fact that the brain for the majority of our lives is exceptionally flexible. The long term effects of musical training have been observed in subjects across their lifetimes in a variety of aged subjects (Jones & Estell, 2007, and Gibson, 2009), as well as through longitudinal studies of children through adulthood (Schellenberg, 2006).

In order to establish an understanding of a child's non-musical development, it has become customary to make observations and gain multiple perspectives before assessing the child psychologically, or academically. Diamond (2010) urges researchers not to narrowly focus on academics, but rather include and address students' social and emotional development as well. When operating in an educational setting, obtaining a perspective of the child where teachers, parents, administrators and the students themselves, all have a contributing voice, usable knowledge for researchers and educators is generated (Rappolt-Schlichtman, Ayoub & Gravel, 2009).

Currently, self-regulation skills, motivation, responsibility and peer-respect have come into focus for the researchers to observe emotional and social development beyond academic achievement. Self regulation skills include the ability to control one's actions, to perform tasks without being told or reminded, to know the consequences of one's actions, and to be able to

think critically about them. Motivation in an educational setting, as discussed by Deci et al. 1991, can be used to evaluate their internalized or externalized reasons for their actions, confidence in their own abilities as well as values for their behavior, i.e. acting responsibly. Peer-Respect is important specifically to the philosophy of El Sistema, where an emphasis is placed on creating a community that supports one another. Each student's development, a highly dynamic process, works to establish mutual understanding of this and other concepts, representative of a developmental tier (Mascolo & Fischer, 2011). Teachers and students alike are encouraged to be invested in both personal and community success, creating a place where students feel safe and challenged, and where development can be extended. In El Sistema, by establishing a deep sense of value, for group process and cooperation, students learn that excellence is in their own hands (Los Angeles Philharmonic Association, 2011).

To date, there has not been an abundance of publications on El Sistema. Of what we have found, most publications are informational about the philosophy or set up of programs, instead of research assessing the cultural, social and developmental impact of El Sistema. In Venezuela, one loan renewal contract, published in English, reports data related to class attendance, school drop-out rate, community involvement and poverty level (Cuesta et al., 2007). This research was completed with a control group, monitoring students in and out of the program longitudinally.

Another larger scale study, sponsored and completed by the Royal Scottish Government took place at Big Noise, the El Sistema núcleo in Raploch, Scotland. This study, published in 2011, was specifically meant to assess the outcomes of the program in the children, families, and community of Raploch. In order to do this the assessment team adopted a variety of methods, that included consultations and surveys with parents, volunteers, staff and community representatives, as well as workshop sessions with and observations of groups of students involved in the Big Noise Program. It is with these philosophies in mind, the researchers of this study have attempted to include opinions from as many stakeholders as possible, as well as to administer a musical assessment to obtain a full scope of the El Sistema program in Boston and its perceived effects. The research presented here is the one of the first projects looking to assess the impact of El Sistema in an American núcleo.

## 2. Method

### Participants

In order to gather data from each student in the school community, the music literacy test was administered individually with each of the one hundred and fifty-six students in the school. To obtain the opinions of the other educational stakeholder, surveys were developed to gather the opinions of parents, classroom teachers, El Sistema resident artist teachers, and administrators, In addition to collecting survey data from school administrators, classroom teachers, El Sistema music teachers and parents, interview protocol was developed and fifty-six students (twenty-four third graders, eighteen fourth graders and fourteen fifth graders) were interviewed by the researcher.

For total number and percentages of participants, see Figure 1.

<b>Instrument Type</b>	<b>Received Data</b>	<b>Percent of Population</b>
Music Literacy Skills Test	156	100%
Parents Survey	39	25%
Classroom Teacher Survey	4	36%
El Sistema Resident Artist Survey	10	63%
School Administrator Survey	3	38%
Student Interview	56	100% (of 3 <sup>rd</sup> -5 <sup>th</sup> Graders)

Figure 1: Administered surveys by type, total population, received survey and percent.

### **Musical Assessment: MLST Development and Procedure**

The Music Literacy Skills Test (MLST) was developed and refined by Dr. Larry Scripp (since 1998) to measure student performance against grade level benchmarks established by the Music-in-Education National Consortium Laboratory School network (Scripp, 1996). This test is designed to measure Pre-K through fifth grade students' abilities to demonstrate a comprehensive understanding of elements of musical literacy, elements that are based on

fundamental concepts of general symbolic literacy shared between music, language arts and mathematics.

This version of the test used by researchers has been developed for the Music-in-Education National Consortium (MIENC) Learning Laboratory School Network (LLSN) sites. This version contains a basic battery of test items that can be adapted by any school interested in music and literacy. Each performance item is a problem-solving task that is preceded by a warm-up activity, so that virtually all students, regardless of musical background, are able to provide measurable relevant responses throughout the scope and sequence of this test. Several studies of this test have been conducted throughout the MIENC and results have appeared in several publications including the *Journal for Music-in-Education*.

The Music Literacy Skills Test (MLST) battery was administered from April to June 2011. At this point in the year, students had been involved in the El Sistema program for eight months. The test administrator met individually with each of the one hundred and fifty-six students in the school; time of day varied from student to student based on variables in the weekly schedule. First through fifth graders were tested for a thirty minute period while Kindergarten and Pre-K students met with the instructor for a 20 minute period.

### **Behavioral Development Assessment: Survey Development and Procedure**

Surveys were developed by the current authors to address the four specific developmental behaviors previously discussed, and were distributed via email as well as the weekly newsletter, were available for four to six weeks and collected using an online system. Each survey was designed to be approximately fifteen to twenty minutes in length, depending on the respondent. By making the surveys completely online, there were few families left out of the subject pool, and all teachers and administrators received their respective survey. The surveys asked respondents to discuss the general behavior of the students, any changes in student behavior they had observed over the course of the year from their perspective, as well as what they would specifically attribute to the changes. All surveys were based from the same general model, beginning first with general questions about the child, name, age, grade, instrument, etc. Each behavior was then addressed specifically first with a question about observed behavior. For example, "Do you see student showing responsibility for their instrument and learning while in class?" This question lead to the next, specifically addressing any perceived change in students

behavior, either no change, positive, or negative. If respondents responded with either a positive or negative change, they were asked “What might you contribute this change to?” If respondents reported no change, they were not asked this question. The set of questions was identical for each behavior of interest, and across surveys.

Although the surveys were developed to be as similar as possible, there were specific differences that should be noted. Parental surveys included questions about their home life, their child’s or children’s behavior at home, and if the developmental behaviors were observed there. Parents were also asked about their child’s or children’s motivation to attend school, habits of practicing their instrument at home, and their general opinion of the El Sistema program. Teacher surveys differed mainly due to the fact that they work with groups of the students at a time. Considering this, classroom teacher surveys asked about general student behavior in school, as well as in their specific classrooms. Classroom teachers were also asked about any noticeable changes, positive or negative, in behavior and academic achievement. The El Sistema resident artist teachers were asked about the students’ behavior during El Sistema time, in private lessons, small groups, and larger ensembles, depending on what the individual taught. Also, they were asked about the levels of musical appreciation and ability of their students and if they had seen change over the course of the year. All teachers were also given the opportunity to, and encouraged to, give specific examples of a child through a story that they felt exhibited the behavior or an important change in the behavior.

The collected surveys were then coded by answer and compared by question across respondents.

### **Behavioral Development Assessment: Interview Development and Procedure**

The interviews were completed with all students in the upper grades were interviewed about their school and musical experiences, and their perceptions of the El Sistema program. Interviews were all between ten and fifteen minutes in length, were interviewed over the course of four days, in order to obtain a significant amount of data, while still being a limited distraction to the students and faculty.

Student interviews were in four sections, addressing basic information, home, school and El Sistema experiences. Questions were designed by the researchers to provide students opportunities to discuss different scenarios that would elicit their developmental level and/or

understanding or motivation, self-regulation, responsibility and peer-respect. As well as asking questions to infer about the students' development, questions about the improvements that the students thought were necessary for the program were added per the request of the Head of School. These questions, although not directly important to this study, addressed the concerns of the students and helped keep them engaged through the interviews. This helped students to feel respected as important members of the school community.

Since the interviews attempted to be a comfortable dialogue between researcher and the student, follow up questions or clarifications were used to keep the interviews following protocol. Most students responded to all questions. It is important to note that never in any of the discussions were the skills that were being assessed ever mentioned. This way the students were not primed with those terms, and could not answer in a way they thought was "correct." The interviews were recorded in session, and later transcribed for better accuracy.

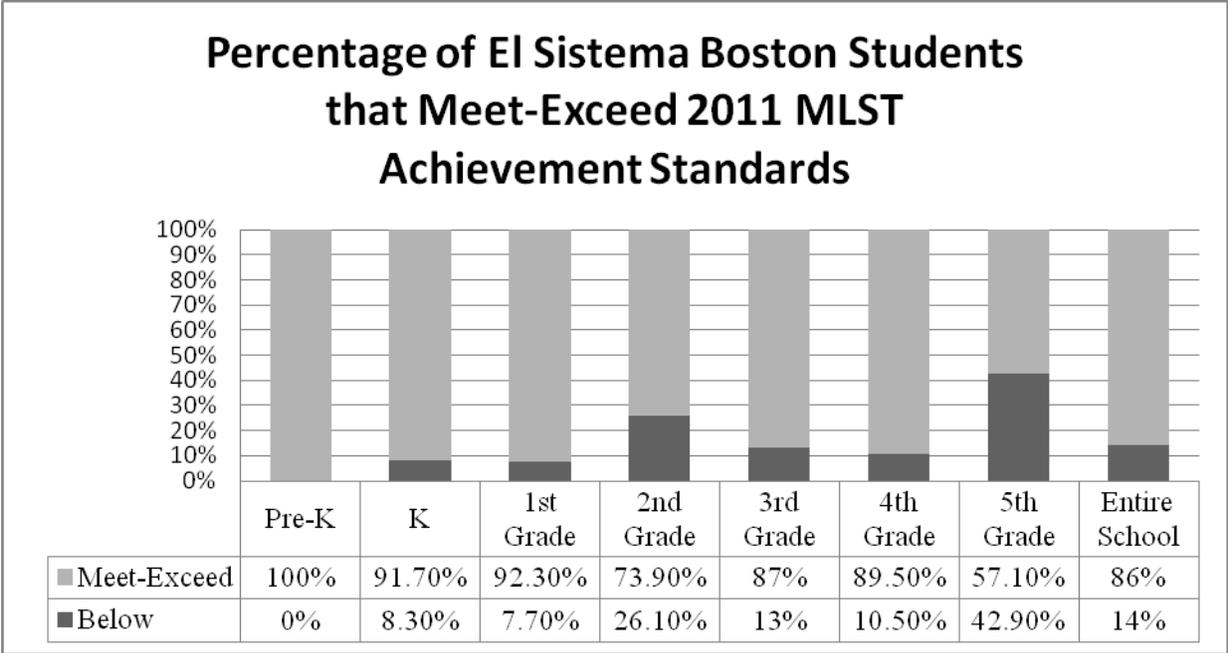
The transcribed interviews were then coded by question, depending on the focus behavior of that question. Questions in the interviews that centered on self-regulation focused on how often the students brought their instrument home, and how often they practiced independently (without parental involvement or reminders). Answers were coded by number of days a week, or verbal equivalent, i.e. "Over the weekend, on Fridays, or Sometimes" were coded as 1-3 days per week. Questions about the students' desire and willingness to attend school, although simple, often lead to a discussion about the students favorite and least favorite parts of school, as well as all of their opinions about classes, projects, field trips, etc. The researcher chose to focus the coding of these questions into a positive or negative response question, with divisions of each for the motivating reason given by the student. When discussing responsibility, students were asked about taking care of their instruments, and their home life (mirroring questions asked in the parent surveys). The most important question of this section addressed the intention of their behaviors at home. Answers were coded based on the four types of motivation as described by Deci, et. al, 1991, and used in the Academic Self-Regulation Questionnaire (ASRQ) as a means to identify at which level the students have internalized their conception of responsibility, and motivations for responsible behaviors. Peer-respect questions asked specifically about working with classmates in groups and what it took to work well in a group. Answers were coded by developmental tier; (Mascolo and Fischer, 2011) based on the understanding of the question and any higher-order thinking that the students showed when talking about working in a group.

In order to tie in the orchestra centered environment of the El Sistema curriculum, questions were added to the peer-respect section of the interview. Questions allowed students to exhibit their understanding of the relationship between working in groups in academic classes and the skills that are used across the curriculum enabling them to be positive performing members of the orchestra. Answers to this question were first organized by whether the student thought the two situations were similar or different. On a secondary level of analysis was completed to show at which conceptual level the students answered.

### **3. Results**

#### **Musical Assessment**

The Musical Literacy Skills Test (MLST) Battery revealed a great deal about the students' music literacy skills and understanding at El Sistema Boston. Though all 156 students were tested, only 153 tests were complete enough to include in our results. Figure 2 shows the percentage of students within each grade level that met/exceeded or that scored below grade benchmarks. As indicated in Figure 2, 86% (132 out of 153) of El Sistema students met or exceeded grade level MLST benchmarks; 14% (21 out of 153) students failed to meet benchmarks. Figure 3 shows the average score of each grade level against the benchmark for that grade level. Overall the average score within each grade was higher than the benchmark; averages scores within each grade were from 6-29% above expected benchmarks. The average score for the entire El Sistema Boston program was 2.5. This is remarkable considering that 63% (97/153) of students tested, those in second grade and below, were expected to reach benchmarks below 2.5, while only 37% (56/153) of students tested were expected to reach a benchmark of 2.5 or above. Another outstanding result was that 19% (29 out of 153) of students, met or exceeded the elementary school graduation mark for music literacy by scoring 3.0 or higher on both the rhythm and aural skills sections of the test. We attribute these positive results to two key aspects of the El Sistema program--good instruction and the number of hours students spend weekly, typically 10-15 hours, studying music.



**Figure 2:** Percentages of El Sistema Boston students that Meet-Exceed or score Below MLST Achievement standards in 2011, by grade.

	Pre-K	K	1st Grade	2nd Grade	3rd Grade	4th Grade	5th Grade
MLST Grade-level Benchmark	1.3	1.6	1.9	2.2	2.5	2.75	3
El Sistema Boston Average Score	1.56	2.07	2.37	2.63	3.13	3.17	3.19
Percentage Above Benchmark of El Sistema Boston Average Score	20%	29%	25%	20%	25%	15%	6%

**Figure 3:** MLST Grade-level Benchmarks and El Sistema Boston Averages for 2011 by grade.

**Behavioral Development Assessment**

Basic results from the online surveys can be found in Figures D and E. Observed instances of the developmental behaviors at home or in classrooms are presented in Figure 4 by type of respondent. Figure 5 addresses the perceived change in student behaviors in school, during classroom time or El Sistema classes from the perspective of classroom teachers, El Sistema resident artists and administrators. It is important to note that the coding of these questions was a dual, Yes/No paradigm, and the limited number of participants causes a possible increase in response percentages.

	<b>Parents</b>	<b>Classroom Teacher</b>	<b>El Sistema Resident Artist</b>	<b>Administrator</b>
<b>Self-Regulation</b>	70%	75%	75%	66%
<b>Motivation</b>	96%	75%	78%	100%
<b>Responsibility</b>	100%	100%	100%	100%
<b>Peer-Respect</b>	--	75%	89%	100%

**Figure 4:** Behaviors of students as observed in homes, classrooms and El Sistema periods of the school day reported by Parents, Classroom teachers, El Sistema Resident Artists, and Administrators

	<b>Classroom Teacher</b>	<b>El Sistema Resident Artist</b>	<b>Administrator</b>
<b>Self-Regulation</b>	100%	75%	66%
<b>Motivation</b>	50%	89%	66%
<b>Responsibility</b>	100%	100%	100%
<b>Peer-Respect</b>	75%	100%	33%

**Figure 5:** Change in behaviors as observed in classrooms and El Sistema periods of the school day reported by Classroom teachers, El Sistema Resident Artists, and Administrators

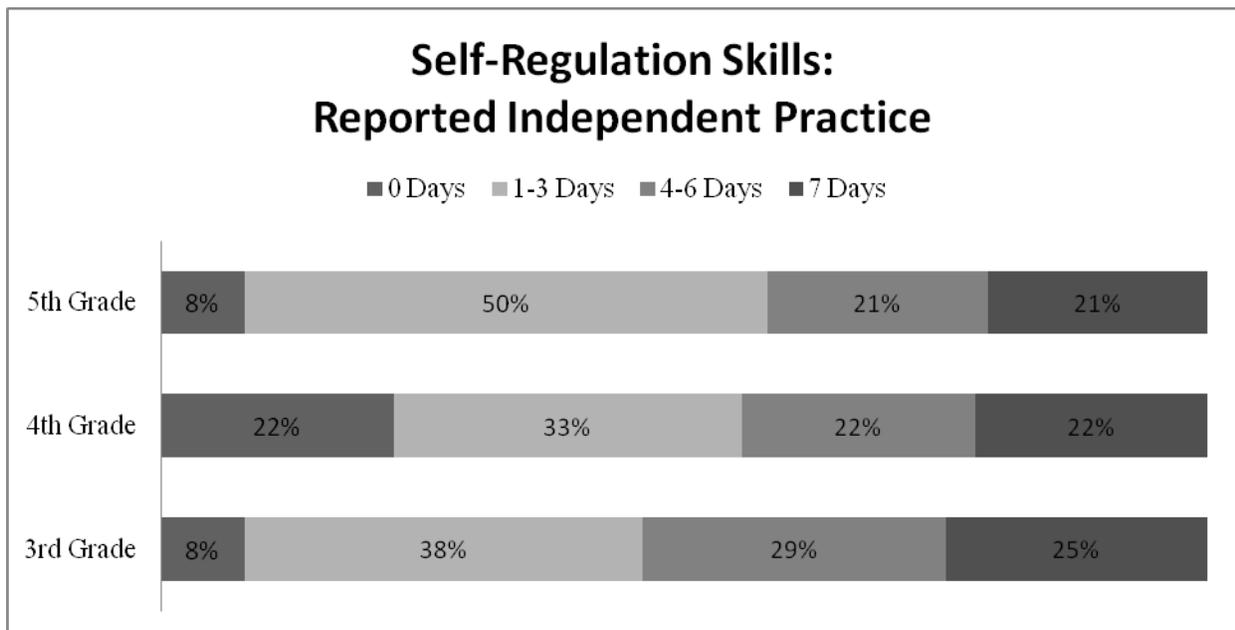
As it can be seen, the responding survey populations converge around a positive view of the students. Observed instances of all key developmental behaviors have been reported in high majority. It is important to note that for the teachers and resident artists, it was often difficult to categorize all of their students together. Often the answers reflected an awareness of the variability at the school. All classroom teachers, El Sistema resident artists, and administrators (100%) reported observing responsible behaviors in their classrooms. All of the classroom teachers replied affirmatively to “Have you observed any change in the ability to self-regulate over the course of the year?” The majority of El Sistema resident artists and administrators also answered affirmatively to similar questions regarding respect, responsibility and motivation.

Although parents were questioned regarding the developmental behaviors at home, over 80% of parents reported specifically that their child is responsible with their instrument when at home, practices on their own, and is proud to share the music they are learning with their

families. Finally, an impressive 100% of responding parents, classroom teachers and El Sistema resident artists made comments of how and why they feel that the El Sistema program has created a positive change in the students over the course of the year.

**Interviews**

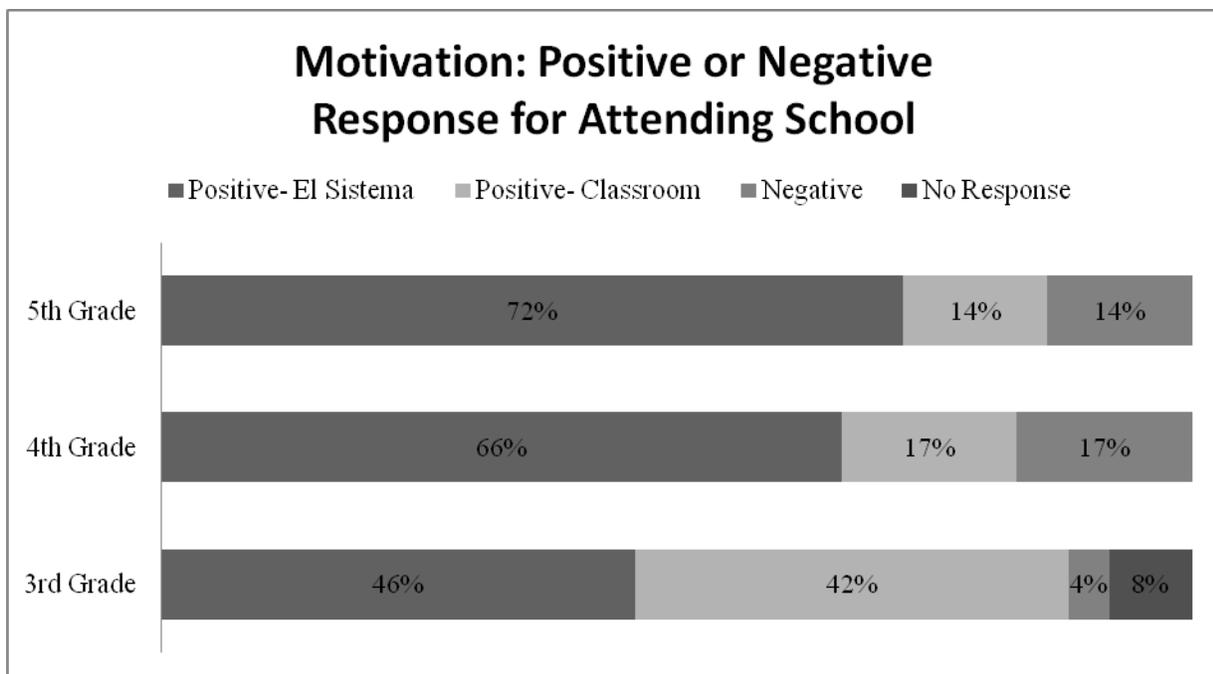
After the results from the interviews were coded, the results were organized into percentage bar graphs by grade for each developmental behavior that was of specific interest. Figure 6 represents the results for self-regulation skills, how often the students reported practicing at home without parental reminders. The most common response across all students was “Over the weekend”. Since the school day is extended, often the students do not return to their homes until after 5:30 pm, making time to practice limited. Yet, the students are making a strong effort to practice. More than 40% of each grade report practicing more than half of the week. The students who encompassed the 0 day group all played cello and bass often remarked that the instrument was “too hard to bring on the bus”. An important result to notice is the eager dedication of the youngest students that were interviewed. The 3<sup>rd</sup> grade class was the only group that had over half of their class practicing more than three days a week. The explanation for this could be the desire to improve quickly since the 3rd grade students are performing in orchestras, and attending group lessons with the 4th and 5th grade students.



**Figure 6:** Reported frequency of independent practice, by grade.

Although answers to questions regarding motivation often lead to discussions about the students' favorite and least favorite parts of school, as well as all of their opinions about classes, the important information lies in whether the students are motivated to attend school, as reported by their parents and teachers. Also, the students' reason for their desire to attend school comes into focus when specifically attempting to assess the El Sistema curriculum.

As seen in Figure 7, over 83% of each grade reported being positively motivated to attend school, aligning with prior survey data. Beyond that, the majority of those positively motivated students, up to 72% in the 5<sup>th</sup> grade, discussed the El Sistema curriculum as their specific reason to attend school. Allow us to briefly share a few of the most poignant answers from the students; from a 4<sup>th</sup> grader, "Because I get to share my musical abilities... I'm an important part of the orchestra." From a 5<sup>th</sup> grader, "This school has high standards, and the music is really good. I wouldn't be able to learn new things on the violin because private tutors are too much money."



**Figure 7:** Reported motivation for attending school, Positive or Negative, and reason, by grade.

In order to identify the intention of the students, determine their internalized conception of responsibility, and motivations for responsible behaviors, answers were coded with the criteria of the ASRQ. This section of the interviews allowed for the students to show that they understand the importance of doing something for others, as well as being part of a family, not

being selfish, and being able to be relied upon. Internal Motivation and External Motivation are identified as the least developed conceptions of motivation, both of which decrease as age and grade level increase, as seen in Figure 8. Introjected Regulation, motivation that is paired with the conception of rules and demands, or societal expectations (Deci, et. al, 1991, pg. 329) was seen in responses of all grade levels, 28% of responding 4<sup>th</sup> and 5<sup>th</sup> graders exhibited this type of motivation, while only 17% of 3<sup>rd</sup> graders responded at this level. Identified Regulation, the highest level of internalization of motivation expected for children, was observed in a strong majority of 4<sup>th</sup> (39%) and 5<sup>th</sup> (44%) graders.

### **Responsibility: Type of Regulation for Displaying Behavior at Home**

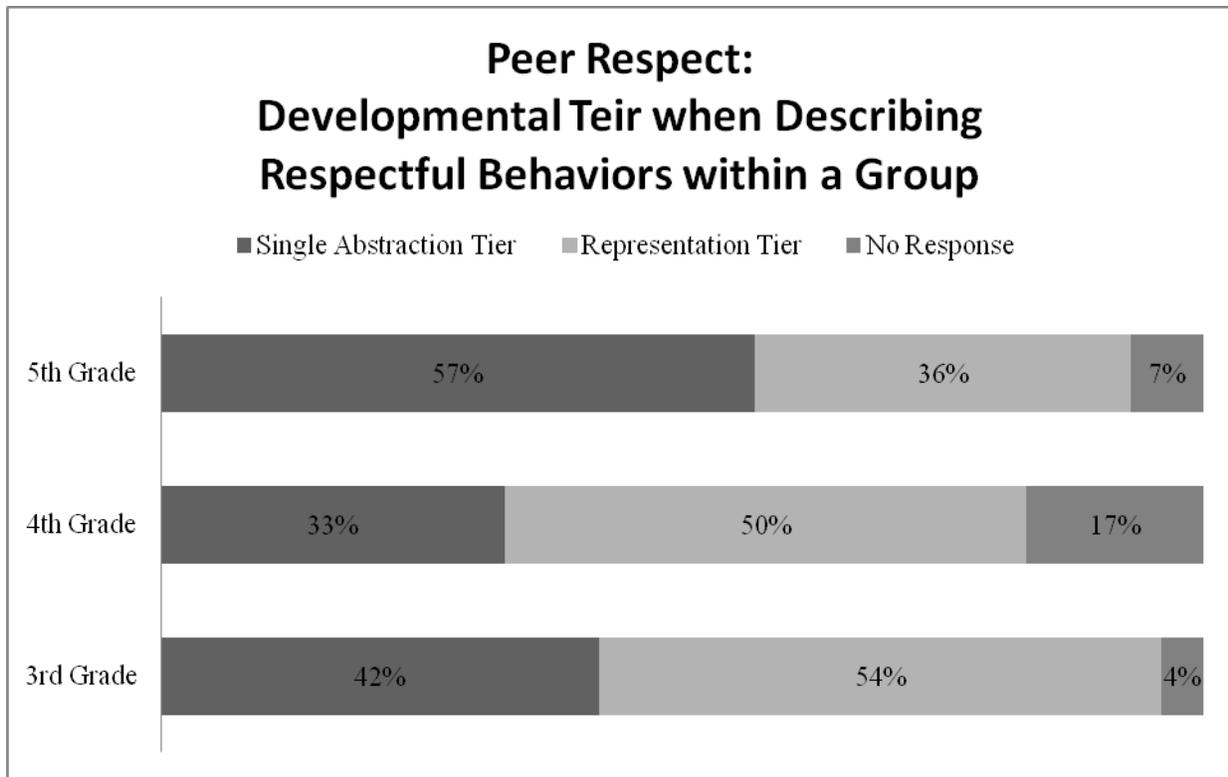
<b>Type of Motivation</b>	<b>3rd Grade</b>	<b>4th Grade</b>	<b>5th Grade</b>
<b>Internal Motivation</b>	8%	6%	0%
<b>External Regulation</b>	25%	16%	14%
<b>Introjected Regulation</b>	17%	28%	28%
<b>Identified Regulation</b>	13%	39%	44%
<b>No Response</b>	37%	11%	14%

**Figure 8:** Reported conception of Responsibility, by level of motivation, by grade.

The final developmental behavior that was of interest was peer-respect. Answers were coded by development tier; (Mascolo & Fischer, 2011), either Representations, which consist of concrete conceptions of ideas, or Single Abstractions that consist of higher-order representations of concepts. According to Mascolo & Fischer, 2011, the developmental tier of Representations is generally seen in children ages four through ten, and Single Abstractions don't generally take hold until age ten through twelve, but understanding development as a dynamic process, the developmental tier of Single Abstractions can occur earlier depending on the child.

For students who did not answer this question due to time, or those who specifically stated that they did not like working in groups and preferred to work alone, their answers were not identified by developmental tier (4%, 17%, 7% of 3<sup>rd</sup>, 4<sup>th</sup>, and 5<sup>th</sup> grade in Figure 9). At the lower level of comprehension, (54%, 50%, 36%), some answers included, "Don't fight, work

together, have a leader, do your part”. These responses still show the development of peer-respect. It is important to note that although these students may not have a fully formed conception of what makes a good group member, they are well on their way to being able to identify behaviors that they try to exhibit while in a group. Responses of those students at the higher developmental level mentioned respectful behaviors such as “Listening to each other, taking turns, supporting one another, and compromising.” Here the results are quite impressive. In each grade, more than a third of the students are exhibiting a higher understanding of the skills necessary to work in a group and the importance of peer-respect. The highest result (57%) coming from the 5th grade class.



**Figure 9:** Reported conception of Peer-Respect, interpreted developmental tier, by grade.

Questions designed to have students show their ability to understand the relationship between working in group and the skills that they use in orchestra, a group that the students are engaging in on a daily basis proved interesting when assessed for developmental level. Answers to these questions are organized in Figure 10, first by whether the student thought the two

situations were similar or different and secondly by the developmental tier of the students answers.

It is interesting that of the 30% of students who considered working in a group, and working in orchestra fundamentally different, 26% of provided reasons were at the representational level, while only 4% of students answered at the single abstraction level (Refer to Figure 10). Common representational reasons that were given for the differences included, "In orchestra we play our instruments.", "In orchestra we have a leader.", "In orchestra people get distracted more.", "In one you're reading words, the other you're reading music."

Response Type	Single Abstraction Tier	Representation Tier	Total Population
Similar	29%	32%	61%
Different	4%	26%	30%
No Response	--	--	9%

**Figure 10:** Reported conception of the similarities and differences between working in a group and orchestra, by developmental tier.

In comparison, a much higher percentage of students who felt that the skills important for working in a group are fundamentally similar to those needed for orchestra (29% of 61%), gave answers that were single abstractions. As an example of answers that identified similarities at the single abstraction level, one student replied, "It's the same. Because cellos are in a group and violins are a group and there are people in groups. And you have to work with the cello section. We work together, like, if they are on the wrong page or playing the notes wrong, we will help them." Another student made clear the art of sounding as one in orchestra, a skill that other students had difficulty describing. "When you're playing by yourself, it's just one sound, but in orchestra you can mix it together and make a whole new sound. Working in a group can be fun because you get more done together." The most important thing to note is that the majority of students (61%) are making the connection between their music and classroom curriculum along with making important social and behavioral developmental strides beyond their years.

#### 4. Discussion

From our observations, the El Sistema curriculum has been perceived as a positive influence on the students' social, behavioral, and musical development. Our data from the music literacy tests supplements the idea that learning to achieve a high level of musical performance can improve behavior, and critical thinking in addition to musical ability. The surveyed populations converge on the idea that the new El Sistema program scaffolds students in their development, improving behavior at home, and in the classroom. Student interviews provide evidence of self-regulation and responsible behaviors, as well as developmentally advanced understanding of working together, and a passionate engagement in the El Sistema program.

Working in an active school setting creates limitations for all educational researchers. Since the study took place over the short period of twelve weeks, participation of all teachers, administrators and parents was difficult to obtain. In order to be efficient and maintain anonymity, parents were provided a link to the online survey; however, this caused the survey to only be available to families with access to the Internet. Although teachers and administrators could easily access the survey from their computers at home or school, not having a hard copy of the survey as a physical reminder could be a possible reason for the low number of responses. Additionally, classroom teachers and El Sistema Resident Artists were constantly engaged with the students during school hours. Due to the limited participation, no statistical analyses were able to be completed on the survey or interview data. However, the nature of this study as a purely qualitative agenda allowed for the surveys and interview protocol to be developed in a way that would provide individuals the most opportunity to express their feelings and observations about the El Sistema program. The perceived positive effect of the El Sistema program is promising, but currently tentative. This study was first meant to provide a foundation for future research that El Sistema Boston is planning to conduct.

For the future, it will be important to continue the process of documenting the opinions of various stakeholders. By observing and documenting important developmental behaviors, and growth shown by the students, a greater understanding of the importance of the El Sistema curriculum will be provided. Continual use of Scripp's MLST, in conjunction with Gordon's PMMA, would be optimal to continually monitor the students' musical abilities. It will be necessary to utilize more advanced tests for those students who reach the MLST graduation standard before fifth grade, to measure and to provide evidence of the unique musical literacy skills and abilities that the students obtain by participating in this curriculum.

To better understand the potential affect in students' academic ability, documented changes in state test scores, classroom assessments, or standardized intelligence assessments could be included and found useful. Also, future studies would ideally be at a larger scale and include a control group, as to prohibit conscious or unconscious bias of the respondents reporting change. Longitudinal studies could also be effective and provide testing at various time points during the year to chart students' development.

The students at El Sistema Boston are not only given the opportunity to learn an instrument from an early age, but also to participate in individual, small group and large ensemble instruction, to learn to care for and be responsible for an instrument, and to perform regularly with fellow students in orchestra. As we have observed, this valuable social interaction enables students to engage in collaborative learning, higher-order thinking, and deeper musical understanding. The implementation of the philosophy and curricular elements of this Latin American curriculum has been the catalyst in sparking the changes we observed. It creates an encouraging atmosphere for families, musicians, educators and researchers to come together and celebrate the important strides that the students of this program are making. Also, as El Sistema Boston continues to build its reputation, it is exciting to imagine the musical and personal progress students may make over the next few years.

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