A CASE STUDY OF AN AWARD WINNING PUBLIC SCHOOL STRING ORCHESTRA PROGRAM

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ABSTRACT

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The purpose of this study was to examine the history, growth, and development of an award winning public school string program. This study provided a description of a model of an excellent orchestra program and produced a general benefit to novice teachers who are setting up new programs, and to music educators by adding to our knowledge of the unique characteristics of a successful string program. There were three major sections of discussion in this study: (1) preparation for setting up a string program; (2) delivery of instruction in elementary, middle school, and high school levels of the program; and (3) continued growth, development, and support of the program. This research was accomplished by analysis of the following data: (a) live observations of class instruction at elementary, middle school, and high school, (b) orchestra handbooks and documents regarding curriculum and other guidelines; and (c) transcripts of interviews with faculty from Upper Arlington City Schools. Results show that individual faculty qualifications and experience prepare them to teach all levels of string classes. Based on their experiences, they are able to create an organized curriculum, design goal directed instructional plans, teach effectively as a team, and sustain a successful string program.
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CHAPTER I: INTRODUCTION

Music education in America was dominated by vocal music in the first half of the 1800s when Lowell Mason introduced and implemented the European Pestalozzi system of learning to sing by rote in the Boston Public Schools. Instrumental music became popular in schools after some European orchestras and bands toured the US in the 1940s. The first string program in America was founded by Albert Mitchell in the early 1900s. Mitchell’s claim that Boston was the first city in the United States to introduce systematic violin class teaching into the public schools is undisputed (Keene, 1987). In 1910, Mitchell went to England to study class teaching methods. Upon his return to Boston in 1911, he organized five violin classes with 16 to 20 students in each class. The lessons were free and were held after school. After two years of experimentation with the program, violin classes were scheduled during the school day. In the 1920s, teachers experimented with heterogeneous instrumental classes, which included violins, violas, cellos, and basses in the same classroom. These heterogeneous classes led to the formation of ensembles.

The first national high school orchestra performed at the 1926 Music Supervisors National Conference (MSNC), the predecessor of the Music Educators National Conference (MENC) (Hamann & Gillespie, 2004). Orchestra programs became more visible, but student enrollment in band programs exceeded enrollment in orchestra programs. World War I military band musicians returned to teach band, providing many instrumental teachers for the schools, but not more string educators. With limited public support and a shortage of string teachers, few string programs existed in public school systems. In the late 1940s and 1950s, the American String Teachers Association (ASTA) and the National School Orchestra Association (NSOA) were formed to address the training, support, and professional development of string teachers.
According to Dillon and Kriechbaum (1978), a successful school string orchestra program includes three elements: (a) cooperation between administrators and music teachers; (b) quality teaching; and (c) stable growth to sustain a program over time. Administrators, teachers, instrument retailers, parents, and students are needed at the onset. Administrators and teachers must address issues related to scheduling, rehearsal space, and communication with parents; instrument retailers provide instrument rental programs and quality instruments. Recruitment, highlighting the benefits of a program, is crucial in the establishment and sustainability of a strong orchestra program. Furthermore, a good program requires good teaching. The quality of teaching depends on many variables, such as knowledge of music, level of performance skill on string instruments, the ability to design a sequential curriculum, and the ability to deliver step-wise instruction. With good teachers, adequate space, quality instruments, and administrative support, a successful school string orchestra program can develop and flourish.

According to Gillespie and Hamann’s study of string programs across the nation (1998), elementary and beginning string programs typically meet two or three days each week and class durations range from 20 to 40 minutes per class, with 30 minutes most common. High school programs meet five days a week for 45 to 50 minutes. String programs are financed through the school budget or through special funding, but the best programs also attract community leaders and parents willing to offer assistance for the program (Hamann and Gillespie, 2004). Besides community leaders or individual parents, other organizations, such as booster clubs, town councils, and residents of a community often support strong string programs. Such financial assistance can help the students with special activities such as national and international tours. In a strong program, there are numerous performance opportunities in the community that continue
to motivate students to practice and to stay in the program. In addition, many students take private or group lessons outside of school.

Many string programs have been established in public schools across the United States, but not all are equally strong. How can novice string educators strengthen existing programs and establish new programs that will be successful? Programs share common elements as described above, but what are the variables that contribute to the development of an excellent string program? A successful orchestra program may be outwardly determined by enrollment, the number of awards won, contest ratings, and the quality of students’ performance, but what is the internal process of building a successful program? How does a successful program get started, how does it grow, and how is it sustained?

The purpose of this study is to examine the history, growth, and development of an award-winning public school string program. This study will provide a description of such a program and serve as a reference for novice teachers who are starting new programs, and for music educators by indentifying the unique characteristics of a successful string program. The study includes three major sections: (1) string class structure, enrollment, and program development; (2) rehearsal observations of instruction; and (3) enrichment activity. This research will be accomplished through analysis of the following data: (a) live observations of class instruction at elementary, middle school, and high school levels, (b) orchestra handbooks and documents pertaining to curriculum and program guidelines; and (c) transcripts of interviews with faculty from Upper Arlington City Schools.
CHAPTER II: REVIEW OF LITERATURE

String Class Structure, Recruitment, Retention, and Program Development

Toot (1952) studied the North Canton (Ohio) High School Orchestra. Total school enrollment was less than 300 students. The orchestra program began in high school and an elementary school violin class was introduced a few years later. High school students were given private lessons from a string teacher during the school day. Cello and bass players were selected from talented students in the band program and they received private instruction with a string teacher. For the grade school violin program, free violin classes and private lessons were offered. Twenty violins were purchased and loaned to third and fourth grade students. After the first year, students were expected to purchase or rent their own instruments. After one year, eight of the twenty students remained in the program, four students changed to band instruments, and the remainder of the students left the program. The first-year high school orchestra included 20 students, while the first-year high school band enrolled 50 students. After eight years, there were 50 members in orchestra and 75 members in band.

In 1998, Gillespie and Hamann conducted a survey study of 652 orchestra teachers from 44 states. Survey questions covered topics such as: the size and location of schools with orchestra programs, support groups of orchestra programs, string curricula, enrollment, selection of repertoire, and faculty qualifications. Responses indicated that enrollment in school orchestra programs increased in the 1990s. The number of orchestra teachers did not increase proportionally, creating a shortage of string teachers. In the same study, Gillespie and Hamann (1998) reported that most beginning string classes start in Grade 4, 5, or 6 in a heterogeneous setting. Surveyed teachers use a combination of Suzuki methodology and a variety of classroom method books. Full orchestra is introduced in middle school, and rehearsals are typically held.
during the school day. Middle school orchestra usually rehearses once per week, while high school orchestra rehearses once or twice a week. Most string programs give three concerts per year in elementary schools, five concerts per year during middle/junior high schools, and six concerts in high school. In the same study, respondents stated that almost half (46%) of the school districts have had a decrease in funding for instrument repair, maintenance, and purchases over a five-year period.

In Gillespie and Hamann’s (1998) study, half of the surveyed schools had developed parent support groups, including a separate orchestra booster group, a band booster organization that included orchestra, and a booster group for all arts organizations. Most of the teachers believed that parents of string students enrolled in the string program are extremely supportive. Teachers also indicated strong external support from music colleagues and school principals. In addition, there was some support from local colleges, but little support from local professional performers.

Gillespie and Hamann (1998) reported that 74% of the surveyed teachers’ beginning students continued from the first to second year of string instruction, 70% of the students continued from elementary to junior high/middle school, and 71% of students continued into high school. Less than 5% of the total high school student population was involved in string programs. One out of every 10 orchestra members participated in other ensembles such as youth orchestras and state or regional orchestras. In addition, 27% of string students studied privately. Less than 5% of the string students became music majors in college.

Gillespie and Hamann (1998) reported that most of the school districts surveyed have a printed orchestra curriculum or course of study available for teachers to follow, but 31% of teachers indicated that they did not refer to a curriculum for instructional planning or to assess
students’ achievement. The surveyed teachers evaluated their students not only based on performance and class participation, but also on practice records, attendance at out-of-school music activities, and on written tests. Teachers also included concert attendance and class attitude as non-performance grading factors.

Gillespie and Hamann (1998) reported that the number of orchestra teachers employed in the United States has remained relatively stable, even though over 70% of surveyed teachers reported an increase in the number of students enrolled in string programs. String teachers teach music classes other than strings, including band, guitar, general music, chamber orchestra, and choir. More women than men teach orchestra classes in the schools. Results also showed that four out of five string teachers hold a master’s degree. Seven-two percent of surveyed teachers have 10 or more years teaching experience, 67% of surveyed teachers were string majors in college, and almost two-thirds play in some type of ensemble regularly.

In 2001, the No Child Left Behind Act (NCLB) was introduced in the United States. NCLB is a federal education act that requires all public school students to be assessed in academic areas annually in order to show adequate yearly progress (AYP) in reading and mathematics. All states must set their own standards of AYP and they will receive federal funding if they meet the standards. Students are divided into subgroups by race, economic status, type of disability, language proficiencies, and gender. Schools must test at least 95% of each of the various subgroups of children and report the results to the public. The overall goal is to achieve 100% proficiency in reading and mathematics by 2014. The consequence for not meeting the AYP standards after the first year is that the school will be placed on a “school improvement” list. If a school is on the list for three consecutive years, supplemental services must be provided for students, such as tutoring and after school programs (No Child Left Behind
Act of 2001, n.d.). Consequently, schools may increase instruction time in reading and mathematics to increase student learning and to raise student test scores.

Colprit (2007) reported the results of an online survey of public and private school string teachers regarding the impact of No Child Left Behind on string programs. Respondents (N =84) reported that one-third of programs provide string instruction in the fourth grade. Teachers meet their beginners two to three times a week for less than 45 minutes and three or more times per week for 45-60 minutes for middle or high school students. Regarding the influence of NCLB on enrollment, 44% of the respondents reported that enrollment increased in the past three years and 27% of respondents reported that enrollment remained the same in the past three years. Sixty-three percent of teachers believed that NCLB had an effect on string instruction. Teachers expressed that there was increased difficulty in pulling students from academic classes for string instruction. Students are sometimes pulled from string classes for tutoring in remedial math and reading and, in some cases, instructional time for strings has been reduced. Teachers report that students are not prevented from participating in string class.

The age for starting string instruction varies across string methods and programs. Suzuki (1969) suggested that children should start learning instruments as young as three years old under certified teachers with parents’ guidance. Students receive instruction in private lessons and in homogeneous class settings. Suzuki instruction emphasizes extensive listening, tonalization, and playing by rote, a process similar to the way that children learn a native language. This type of instruction is also known as the “mother tongue method” (Suzuki, 1969). When Suzuki instruction is implemented in a public school system, Diana Tillson, Music Coordinator of the Bedford School District, New York, suggests that first graders receive two 15-minute lessons each week in classes of two students, with parents in attendance. Tillson also
suggests that students should begin cello instruction in the 4th – 5th grade, and viola and bass instruction should start in middle school. In the second grade, students are scheduled in groups of three for two 20-minute lessons a week, with parents in attendance. For the third to fifth graders, class size rises to six students in two 30-minute lessons a week. In middle school, students not only attend specific instrument classes, but also participate in orchestra. Activities include five 40-minute instructional classes every two weeks in classes of six to ten students for instrumental instruction, a 30-minute sectional orchestra rehearsal, a 30-minute string orchestra rehearsal, and a 70-minute full orchestra rehearsal with winds and percussion. High school students have orchestra every day, as well as chamber music ensembles during school time. Students are strongly encouraged to study privately and to join a local youth orchestra.

Dillon and Kriechbaum (1978) provided descriptions of how to establish a string program and a method of teaching heterogeneous classes. The information they provide is intended to assist college level music education students and public school music teachers across the United States. An overview of effective instruction for all levels of string classes is also provided, with a recommendation that orchestra programs span from Grades 5-12. Beginning string classes should start in fifth grade and meet three to five days a week in a heterogeneous setting for a minimum of 30 minutes per lesson. Dillon and Kriechbaum (1978) believed that all of the class time should be spent learning to play the instrument. Instruments should be pre-tuned and ready for students to play, especially for first-year students. However, if the situation does not allow, teachers should establish a routine to help students tune their instruments in under five minutes in each class period. Dillon and Kriechbaum (1978) suggest that students should learn pizzicato and rote tunes once they can hold the instrument in correct playing position. Rhythm reading is introduced in the first lesson, while simple note reading is introduced in the second lesson. After
learning three notes on the instrument, teachers can start to teach the bow hold. For the first year of string instruction, students should concentrate on building technique rather than on performance. From the second year onward, teachers should balance the time between developing technique, and solo and ensemble performance skills. Dillon and Kriechbaum (1978) suggest that 13 violins, six violas, and six cellos are needed in order to have a balanced beginning string class. Bass instruction is delayed until the second year. Dillon and Kriechbaum (1978) believe that string basses, cellos, music stands, tuning devices, storage racks, string bass stools, sheet music, and a repair budget should be included in the financial plan when starting a string program.

Tellejohn (1989) offered some practical suggestions for string teachers to develop their program. She believes that the best way to measure a program’s success is to look at the size of the high school orchestra. Teachers have to be able to instruct large, heterogeneous classes so that students not only develop their playing skill, but also have the opportunity to learn ensemble skills and teamwork. She suggests that string instruction begin in the fifth or sixth grade to ensure a large enrollment at the high school level. Tellejohn (1989) believes that teachers must be masters of pedagogy on all string instruments, as well as in classroom management. Teachers should study string pedagogy at the college level and continue professional development after obtaining a string teaching position.

String programs can obtain financial and external support in many ways. Tellejohn (1989) suggested that teachers can promote the orchestra program outside the school, garnering support from the community. Small groups, such as chamber orchestra or quartet, can be featured performing in the community, creating a higher profile for the program.
Tellejohn (1989) states that effective student evaluation is not based on attendance alone, but based on students’ performance skills as well. Therefore, performance skills should be carefully identified and consistently evaluated. She also suggests that students have individual playing tests while other students are taking a written test, or students should tape a performance or practice session for assessment.

Heterogeneous Classes

Green (1966) pointed out that many books deal with the specifics for each stringed instrument, but little has been written on how to teach all four instruments simultaneously in one classroom. Therefore, she provided detailed teaching instructions for heterogeneous classes. For the first year of the program, classes meet twice a week. Home practice should be delayed until after the students have set good hand positions, can draw straight bows, and play one or more tunes well by rote. Home practice assignments begin after ten lessons are completed in supervised classes.

In order to practice a D major scale on all four instruments, Green (1966) suggested that basses stay in the 1st position and start with open D and use open A instead of using the 1st finger A on the G string. When students first learn how to bow, open D and A strings are used, providing an opportunity to study the bow angle, contact point, and string crossings.

Green (1966) noted that orchestras stay together by seeing and recognizing the down-beat in every measure. Thus, two exercises to recognize the down-beat are essential. The first exercise is to ask students to count out loud, saying “One” whenever the baton marks the first beat of each measure. A conductor may change the meter to 4/4, 3/4, 6/4, 2/4, etc. In the second exercise, students play on the down-beat of each measure, while the conductor beats through the rest of the measure. Both exercises help students to look at a conductor and to follow a down-beat.
For violin and viola vibrato, Green (1966) believes that third position is the easiest position for introducing the vibrato motion. The vibrato motion must be practiced in rhythm, resting between practice trials to avoid building tension in the hand.

In shifting, Green (1966) discusses the components of smoothness and accuracy. There are several principles of shifting. First, the finger on the string at the beginning of the shift completes the slide into the new position and the finger required in the new position comes straight down in place. Second, when a shift to a higher numbered position goes to a finger of a lower number, the lower numbered finger takes over during the shift and completes the slide into the new position, preventing over-shooting the desired pitch. Third, in shifts under slurs, bow speed should slow just before the finger starts sliding to the new position.

Green (1966) also suggested that on the first day of orchestra, each section should play a few measures alone, allowing new players to distinguish their individual sound. Sympathetic vibration is also discussed as it pertains to accurate intonation, tone quality, and resonance of the instrument. These vibrations are also called “ring tones.” Teachers should develop students’ awareness in the early stage of playing, similar to tonalization exercises found in the Suzuki method (1980). For example, students should watch for the vibration of their open strings when they play the octave above.

Smith (1985) conducted a study to examine the effect of finger placement markers on the development of intonation accuracy of college-level non-string majors. Students were taught by rote by the same instructor for 16 weeks, using a combination of Paul Rolland techniques and Suzuki literature. Classes met for 30 minutes two times each week. The three groups used one of the following methods (a) no finger place markers; (b) first and third finger place markers in first position; and (c) finger placement markers for only the first 8 of 16 weeks. Students were tape-
recorded at the end of the eighth week and the end of the sixteenth week. Five string experts rated students’ intonation. Although the results are not significant, Smith found that students who utilized finger placement markers for only the first eight weeks had the greatest decline in intonation accuracy at the end of the study. In contrast, students who utilized finger placement markers for 16 weeks increased their intonation accuracy by the end of the study.

Smith (1988) conducted a similar study three years later with 83 public school fourth- and fifth-graders, meeting twice a week for forty-minute class periods over 32 weeks. In this study, there were four classes in each experimental group and eight teachers were randomly assigned to one of the groups. Two of the eight teachers played violin as a primary instrument in college while the other six had only taken one semester of string methods at the undergraduate level. In the intonation assessments, there were no significant differences between students who used finger placement markers during instruction and those who did not. There was also no significant difference between the intonation of students taught by music teachers whose primary instrument is violin and the intonation of students taught by music teachers who had taken one semester of string methods. The researcher recommended a further study of instructional methods of string majors and music teachers who have taken one semester of string methods.

Young (1986) believed that students can learn to play with less tension when they can imagine a scenario unrelated to string playing that uses similar principles of motion. For example, when there is a passage requiring fast finger action, teachers can ask students to imagine that the fingerboard is an alligator’s nose, and tap the finger with a quick release before the alligator snaps at them. There are scenes recommended for improved bowing, left hand skills, comprehension of musical ideas, rests in the music, and music making. Teachers can pinpoint problems, then choose suitable scenes for students to imagine and apply to their playing.
Witt (1986) investigated the use of class time by teachers in secondary instrumental music rehearsals. The results showed that the largest percentage of class time, 43.3%, was spent on performance, including individual, section, and the entire group. Teaching episodes, which included verbal interactions with students, demonstration, and instructions, occupied an average of 38.9% of class time. An average of 17.8% of class time was used for getting ready activities, which included announcements, tuning, organization of music, and other activities. When comparing orchestra and band classes, teaching episodes were fewer but longer in duration in the orchestra classes. Orchestra classes spent almost twice the amount of time tuning compared with band classes (Witt, 1986).

Rolland (2008) presented the results of the Illinois String Research Project. In the videos, his students, who had received less than two and a half years of class instruction, demonstrated integration of movements and smooth patterns of motion. He believed that teachers must know and understand the human body as it relates to playing the violin. When students play their instruments, they should move without unnecessary tension. He addressed problems of coordinating movements to eliminate excess tension. For example, he had students form a circle and walk to a pulse while playing. Rolland (1947) pointed out that time must be devoted regularly to intonation practice. He suggested that scales, sequences and broken chords practiced in the key of a piece, provide the best means for improving intonation, especially for beginners, to develop a sense of tonality before playing a piece.

Rolland (1947) suggested that teachers should concentrate on one problem at a time. However, teachers should not spend too long on a single problem when students are developing new skills. He believed teachers can introduce all four fingers at once, so that students can establish the correct left-hand position, but problems may occur if the students use instruments
that are too large. He reported that MENC members had recommended that all essential bowings and positions should be introduced within the first three lessons. He agreed that if students are learning by rote, teachers can introduce upper positions shortly after or even with the first position. He also suggested that through teaching third and fourth positions, the closer intervals create smaller and more flexible hand positions. Rolland commented that the “finger-after-finger” method, commonly used in old method books, may establish bad hand position habits for students, because too much time is spent drilling the first and second fingers. However, the “finger-after-finger” method is beneficial for teaching students to read music.

Rolland (1947) pointed out that many older methods reflected the influence of “Solfeggio” and started with the key of C. He believes that using the new method, which starts with sharp keys, is preferable as it develops unified finger patterns on all strings. He also noted that beginners play better if their eyes are on their instrument. Therefore, teaching beginners by rote is appropriate and helpful.

Rolland (1947) believed that class time is saved by playing in unison. In addition, teachers should call upon students to solo play, while the rest of the students pizzicato, sing the notes, or tap the rhythm. He recommended that teachers alternate solo and tutti playing every two to four measures, keeping students alert. He suggested that teachers can accompany on either piano or violin, but accompanying should not occur during more than half of class time. Teachers can introduce rhythms by tapping, and new pieces by singing or pizzicato. After six or eight weeks, students can start private lessons along with class lessons.

Rolland (1947) recommended tuning instruments in advance if instruments are kept at school. He reminded novice teachers that they should not conduct in beginners’ classes, but command attention by counting clearly and rhythmically. Teachers should start the lesson by
reviewing old material and fundamentals in order to improve position, tone, and intonation. Then, teachers can introduce new material at a slow tempo and speed it up gradually. In general, instructions should be given before students begin playing. Teachers must allow time for students to practice and develop a skill before expecting perfection.

*Instrumental Music Teaching and Teacher Qualifications*

In the essay about instructional sequences from *Intelligent Music Teaching*, Duke (2005) suggests starting a lesson with fundamental skills and easy tasks, such as playing open strings with the full bow. Students can review the material and teachers hear how well the students can play. This lesson format serves as a guide for daily practice.

Goolsby (1996) compared the use of rehearsal time during classroom periods by (a) outstanding and successful instrumental music teachers; (b) novices who were first-year or second-year teachers; and (c) student music teachers, who had completed at least 5 weeks of a full-time internship. The independent variable was the amount of teaching experience. The dependent variables were the time used for preparation, initial teacher talk, warm-up, time during each musical selection, breaks, final teacher talk, and dismissal. Thirty band directors were studied. Each director videotaped three rehearsals with his or her regularly rehearsing ensemble. In this study, only the second and third tapes were used in data analysis. Findings from this study included: student teachers talked most and allowed students to play least; experienced teachers provided the most breaks, dividing rehearsal time more equally between warm-up and two musical selections, spent more than half the period playing, used the most nonverbal modeling, got the ensembles on-task the quickest, and talked the least during rehearsals.

American String Teachers Association (ASTA) standards (1998) were based on the standards of the Music Educator National Conference. MENC believes that the qualifications of
teachers affect the quality of teaching. According to the ASTA standards (1998), string teachers should understand and apply pedagogy for all string instruments in both homogeneous and heterogeneous classes as demonstrated in the Suzuki method, Rolland method, and Bornoff method. They also need to demonstrate effective classroom management skills. ASTA encourages teachers to continue to perform, to be involved in professional associations, and to attend ongoing professional development workshops and courses.

*String Method Books*

Bornoff (1948) introduced a method book for classroom and private teaching. This method book uses a string cycle, in which students play from the lowest string to the highest string and back to the lowest string. Playing open strings in a cycle is applied in detached bow strokes, and spiccato at the frog. In addition, hooked bowings and open-string double stops are incorporated. Then, Bornoff introduces five finger patterns of half or whole steps. The five finger patterns for violin are: (a) half step between first and second finger, (b) half step between second and third finger, (c) half step between third and fourth finger, (d) half step between open string and first finger, and (e) half steps between open string and first finger, and third and fourth finger. The exercises in this method book include the string cycle with these five fixed finger patterns. His series of method books include both solo and ensemble works. Bornoff believed that after one year of playing the instrument, students can play in any position using the finger patterns, and maintain solid bow control. He described traditional pedagogy as monotonous with mindless repetition, causing students to lose their motivation to learn. Therefore, he utilized finger patterns, which are indicated at the beginning of each excerpt, tune, and exercise. For example, when students play a D major scale on violin, they use the second pattern on the D and A strings. When students play a two-octave G major scale on violin, they need to use the second finger...
pattern on the G and D strings and the first finger pattern on the A and E strings. Students must be fluent with the finger patterns to complete the exercises and play in different keys. Thus, students only need to know the finger pattern and the string and not the note names. He believed finger patterns help students learn tunes faster and more accurately.

Muller and Rusch (1961) authored *String Method: For Class or Individual Instruction*, now considered a traditional method book. This method book is designed in 30 lessons. In the first six lessons, singing, playing pizzicato, and note reading are emphasized, while the bow is used after the seventh lesson. Each lesson begins with repetitive exercises followed by tunes. Although the method book is printed in black and white, pictures of people illustrate the fundamental bow hold and instrument position. Charts show distance relationships between fingers and intervals.

Applebaum’s (1960) *String Builder* and Herfurth’s (1960) *A Tune A Day* are systematic traditional string method books written in the early 1960s. Both method books state that they are suitable for instruction in individual lessons or group/classes. However, *String Builder* was often used in a heterogeneous string classroom, because the teachers’ manual includes violin, viola, cello, and bass. In contrast, *A Tune A Day*, was designed for a homogenous string setting with piano accompaniment. Both method books provide students ensemble experience: playing with different string instruments, a piano, or the teacher.

Both methods are supported by three consecutive books. However, *String Builder* Parts 1-3 only covers Elementary to Intermediate levels. Students use the bow to play open strings in the first lesson. In contrast, *A Tune A Day* includes Books 1-3 and covers three levels: Elementary, Intermediate, and Advanced. Material is systematically organized into 25 weekly lessons. Students play pizzicato in the first lesson and learn how to use the bow in the second
lesson. In both *String Builder* and *A Tune A Day*, short repetitive tunes help to develop music reading and playing skills. Duets for teacher and students help students to develop their listening skills. More advanced students may play the teacher’s part for further challenges. With repetitive exercises and less complicated pieces, teachers can address tone quality and fluent music reading.

New method books, which combine philosophies from multiple authors specializing in upper and lower string instruments, were introduced in the 1990s. More melodic tunes are incorporated in place of repetitive exercises. Colored graphics help to stimulate students’ learning interest. In *Strictly Strings*, Dillon, Kjelland, and O’Reilly (1992) present a unique letter-note style music notation for beginning note reading. Letter-note style music notation refers to letters put on the staff instead of notes heads. The musical staff and treble clef are not introduced until students are able to play a D major scale pizzicato and arco. Cassette tapes and CDs complement the literature and help students with intonation and rhythm. The series also includes string orchestra literature and small ensemble arrangements.

Holmes and Volk (2001) wrote *World on a String* to expose students to world music. This method book provides over 30 pieces from Africa, Asia, Europe, and North and South America. Tunes are arranged for solo, duets, and string orchestra. There are no technical exercises in the book, but detailed historical backgrounds, stylistic elements, and suggestions for performance for each piece appear in the teacher’s manual.

In *Essential Elements 2000 for Strings*, Allen, Gillespie, and Hayes (2002) use a melodic approach written for heterogeneous classes, homogeneous classes, and private lessons. Pieces begin pizzicato to develop students’ hand positions and listening skills. Innovative graphics printed in color illustrate correct hand positions. In addition, there are CD and DVD recordings
that accompany the books, so that students can play along. Correct playing positions can be reviewed by watching the DVD.

*String Explorer* (2002) is another method book for heterogeneous classes. In each of 14 units, there are bow and finger exercises, followed by short solo tunes and duets. The colorful book uses photographs to demonstrate correct hand positions. The CD is intended to encourage students to practice at home and a website provides additional resources for students and teachers. The website features tips on how to practice, tune the instrument, and reasons for participating in orchestra. Puzzles and games reinforce students’ knowledge in an interactive and interesting way. A free interactive downloadable program allows students to listen to the tunes and exercises from the method book and to play along with a MIDI program.

**Summary**

String instruction in heterogeneous settings was introduced in the 1920s and became more popular in public schools in the 1940s. In the late 1940s and 1950s, professional associations such as the American String Teachers Association (ASTA) and the National School Orchestra Association (NSOA) were formed, providing support and resources for string teachers.

The class schedule, the quality of teaching space, recruitment, availability of instruments, and the number of students enrolled form the structure and the foundation of a successful string program. String instruction is typically scheduled during a class period, structured in heterogeneous settings, and begun in the 3rd – 4th grade. However, some teachers do not begin cello and bass instruction until the 4th – 5th grade. Most classes meet two or three times a week for 20-30 minutes during elementary school, and five times a week for 45-60 minutes in middle school and high school. However, full orchestra is usually introduced in middle school, rehearsing once a week. Beginning string class sizes vary from six to twenty-five students. Since
the 1990s, enrollments in most string programs have steadily increased despite changes in class scheduling due to the No Child Left Behind Act.

A successful string program requires careful planning and external support. Support comes from orchestra booster groups, school principals, and local professional performers. Teachers prepare budgets for instrument repair, maintenance, and for the purchase of instruments and other equipment.

A well-designed curriculum is essential for a successful string program and includes careful selection of method books, repertoire, and effective means of assessment. No matter which method books are used, researchers and teachers agree that the optimal goals are to develop students’ playing skills, ensemble skills, and reading ability. Students are strongly encouraged to receive private instruction in addition to their ensemble playing.

In assessing student progress during class instruction, students’ class and concert attendance and performance skills are commonly used as indicators. However, some teachers assess students through written tests, students’ practice records, and participation in after school musical activities.

To enrich students’ experience, elementary students usually have three performances each year while middle school and high school students have five to six. Some students also participate in all-state orchestras or local youth orchestras.

When all stringed instruments are taught at once, qualified teachers must provide effective instruction for individual instruments as well as for the ensemble. Most researchers agree that most of the class time should be performance based and time devoted to tuning should be five minutes prior to or at the beginning of class. Class time is also used for announcements, organizing music, teachers’ demonstrations, and instructions.
Researchers also find that professional development is essential, especially for novice teachers and non-string majors. All teachers are expected to have good classroom management skills and to be familiar with traditional and new methodologies.

Method books are the basic teaching materials for string programs. Most of the method books are suitable for group/class, or individual instruction. Playing skills are developed through repetitive exercises in traditional method books while melodies are introduced earlier in modern method books. Most leading string educators believe students should develop correct left-hand position through pizzicato before playing with the bow. The main difference between traditional and modern method books is a result of technology. Regardless of method books used, the goals are to develop students’ individual playing skills, ensemble skills, and music reading ability.
CHAPTER III: METHOD

Subjects

The Upper Arlington Orchestra Program (Ohio), which was awarded the grand prize at the American String Teachers Association National Orchestra Festival in 2007, is the focus of the study. Participants in this study were faculty from elementary, middle school, and high school orchestra programs in Upper Arlington City Schools. Data were recorded during live observations at elementary, middle, and high schools. Members of the string faculty were interviewed by the researcher in person and through e-mail.

Procedure

To investigate the history, development, and current status of an award winning public school string program, data were gathered from the following sources: (a) live observations of class instruction at elementary, middle, and high schools, (b) documents such as: a student handbook, an orchestra curriculum, and a Course of Study; and (c) transcripts of interviews with faculty from Upper Arlington City Schools. All data were collected in March 2009. All observed classes were heterogeneous string classes. Fifteen students comprise the elementary class, 24 students are in the middle school class, 20 students participate in Symphony Strings (high school), and 90 students in Concert Orchestra (high school).

A 30-minute rehearsal at an elementary school and a 42-minute rehearsal at a middle school were observed. Also, a 49-minute rehearsal from the Symphony Strings, the second most advanced of four orchestras in the high school, and a 49-minute rehearsal from the Concert Orchestra, the least advanced ensemble in the high school, were observed. Observations occurred during the regular class period in the normal school setting. Interaction between the researcher and students was avoided. Teachers conducted classes and rehearsals in the normal manner.
Teachers’ instructions were documented on an observation form created by the researcher. After collecting the data from the live observations, teachers’ behaviors from the rehearsals were analyzed and presented in the following categories: (a) information – verbalizations by the teacher that include general information without directing students to perform in a specific way, (b) directive – verbalizations by the teacher that indicate what students should or should not do, (c) demonstration – use of voice or instruments to demonstrate an idea, (d) questions – verbalizations by the teacher that require a verbal response from students, (e) positive feedback – positive comments after students’ performance to show approval, (f) negative feedback – negative comments after students’ performance to show disapproval, (g) students play with teacher, (h) students play solely, (i) students play in small ensemble, and (j) students play with the entire group.

Members of the orchestra faculty were informally interviewed by the researcher individually. The faculty also answered questions from the researcher via e-mail. Interview questions were related to the history of the program, faculty qualifications, student recruitment methods, financial resources and support, scheduling of classes, performance opportunities, relationship of feeder schools to middle school and high school programs, and external support for the music department. In addition, the faculty provided an orchestra handbook, curriculum documents, and Course of Study guidelines for the program.
CHAPTER IV: RESULTS AND DISCUSSION

With an award winning program as a model, this study examines documents, and descriptions of the processes that contribute to the establishment, development, and maintenance of an excellent string program in a public school. There are many string programs established in public schools across the United States, but not all are equally strong. A successful orchestra program may be outwardly determined by enrollment, the number of awards won, contest ratings, and the quality of students’ performance. The purpose of this study is to examine the internal process of building a successful program, and how it is nurtured and maintained.

String Class Structure, Enrollment, and Program Development

Upper Arlington, a northwest suburb of Columbus, Ohio, with a population of more than 35,000 people, has five elementary schools, two middle schools and one high school. The median income for a family in Upper Arlington is $88,365, which exceeds the median household income in the US ($60,374). Ninety-one percent of the population is white and 5% of the population is Asian. Fifty students at the elementary level qualify for the free lunch program. Table 1 shows facts about the Upper Arlington City Schools strings program. Started in 1922, the program spread from schools in the southern part of town to the schools in the northern part of town in the 1990s. Over time, the growth of the program required three additional full-time faculty members. Now the program employs four full-time and one half-time string teachers. One of the full-time string teachers is the director. String teachers serve almost 700 students of the 5,500 students enrolled in elementary, middle, and high schools (Table 1). One of the reasons students join the string program is that they like the sound of string instruments. Other reasons are the success and enjoyment expressed by older siblings and friends in the program. Also, parents encourage their children to join because of the value they place on quality music.
education. However, some students drop out after the first year of instruction. The attrition rate is 40% from grade four to five, less than 5% during middle school years, less than 3% from middle school to high school (grade eighth to ninth), and approximately 15% during high school years (Table 2). Students usually leave the program because they do not have enough time to keep orchestra in their schedule, while others simply develop other interests.

Recruitment, in early April, starts in the third grade and instruction begins in the fourth grade. The director tries to establish strong connections with younger students and the general music teachers at the elementary schools through visiting general music classes to promote the program. Middle school students tour, demonstrating their instruments at the feeder elementary schools. In addition, fifth graders play for the third graders and a string quintet from the high school demonstrates each instrument.
Table 1

*History and Structure of the Orchestra Program*

<table>
<thead>
<tr>
<th>Program established</th>
<th>1922</th>
</tr>
</thead>
</table>
| Number of schools served | 5 elementary schools  
2 middle schools  
1 high school |
| String faculty in the program | N= 4.5 |
| Total enrollment of students | N= 694 (12% of the school system) |
| String orchestras in high school | N= 4 |
| Recruitment | 3rd grade |
| Beginning instruction | 4th grade |

Table 2

*Retention Rate*

| Elementary schools (4th – 5th grade) | Approximately 60% |
| Middle schools (6th – 8th grade) | > 95% |
| Middle schools – High school (8th – 9th grade) | > 97% |
| High school (9th – 12th grade) | Approximately 85% |
Table 3a, Table 3b, and Table 3c show the 2008-2009 academic year enrollment of each instrument at each level, while Table 3d shows the percentage of violins, violas, cellos, and basses at each level during the 2008-2009 academic year. In Upper Arlington High School, there are four string orchestras: Concert Orchestra, String Orchestra, Symphony Strings, and Chamber String Orchestra. They are listed from lowest to highest according to level of advancement. The Concert Orchestra is the lowest level orchestra among the four orchestras and members of the Chamber String Orchestra are selected from the top players in the Symphony Strings. Annual skill evaluations for students who want to move up to the next orchestra take place in early April. Students must prepare and videotape their performance of an assigned rhythm, an orchestral excerpt, and a solo piece of their choice. Faculty members review the tapes and give a sight-reading test to each student. A letter of recommendation from the current orchestra teacher serves as an additional evaluation component.
Table 3a

*Number of Students by Instrument at Elementary Level*

<table>
<thead>
<tr>
<th></th>
<th>Violin</th>
<th>Viola</th>
<th>Cello</th>
<th>Bass</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Elementary level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>16</td>
<td>17</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>14</td>
<td>6</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>30</td>
<td>23</td>
<td>9</td>
<td>5</td>
</tr>
<tr>
<td>School B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>13</td>
<td>5</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>18</td>
<td>4</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>31</td>
<td>9</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>School C</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>27</td>
<td>17</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>20</td>
<td>4</td>
<td>10</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>47</td>
<td>21</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>School D</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>14</td>
<td>6</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>9</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>23</td>
<td>6</td>
<td>17</td>
<td>4</td>
</tr>
<tr>
<td>School E</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>13</td>
<td>6</td>
<td>9</td>
<td>4</td>
</tr>
<tr>
<td>5&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>21</td>
<td>10</td>
<td>11</td>
<td>7</td>
</tr>
</tbody>
</table>

Number of students on each instrument: 152 (49%) 69 (22%) 70 (23%) 19 (6%)

Number of students in elementary level: 310

Table 3b

*Number of Students by Instrument at Middle School Level*

<table>
<thead>
<tr>
<th></th>
<th>Violin</th>
<th>Viola</th>
<th>Cello</th>
<th>Bass</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Middle School level</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>School A</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>18</td>
<td>6</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>7&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>23</td>
<td>7</td>
<td>11</td>
<td>2</td>
</tr>
<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>18</td>
<td>7</td>
<td>7</td>
<td>4</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>59</td>
<td>20</td>
<td>27</td>
<td>9</td>
</tr>
<tr>
<td>School B</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>19</td>
<td>9</td>
<td>14</td>
<td>4</td>
</tr>
<tr>
<td>7&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>16</td>
<td>15</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>8&lt;sup&gt;th&lt;/sup&gt; grade</td>
<td>12</td>
<td>7</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td>47</td>
<td>31</td>
<td>27</td>
<td>10</td>
</tr>
</tbody>
</table>

Number of students on each instrument: 106 (47%) 51 (22%) 54 (23%) 19 (8%)

Number of students in middle school level: 230
Table 3c

*Number of Students by Instrument at High School Level*

<table>
<thead>
<tr>
<th>High School Level</th>
<th>Violin</th>
<th>Viola</th>
<th>Cello</th>
<th>Bass</th>
</tr>
</thead>
<tbody>
<tr>
<td>String Orchestra</td>
<td>36</td>
<td>8</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Concert Orchestra</td>
<td>33</td>
<td>10</td>
<td>10</td>
<td>7</td>
</tr>
<tr>
<td>Symphony Strings Orchestra</td>
<td>22</td>
<td>5</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Number of students on each instrument:</td>
<td>91(59%)</td>
<td>23(15%)</td>
<td>22(14%)</td>
<td>18(12%)</td>
</tr>
<tr>
<td>Number of students in high school level:</td>
<td>154</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chamber Orchestra*</td>
<td>10</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

*Chamber Orchestra members are the top players from Symphony Orchestra*

Table 3d

*Percentage of Violins, Violas, Cellos and Basses by Level*

<table>
<thead>
<tr>
<th></th>
<th>Violin</th>
<th>Viola</th>
<th>Cello</th>
<th>Bass</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary School level</td>
<td>22%</td>
<td>10%</td>
<td>10%</td>
<td>3%</td>
</tr>
<tr>
<td>Middle School level</td>
<td>15%</td>
<td>7%</td>
<td>8%</td>
<td>3%</td>
</tr>
<tr>
<td>High School level</td>
<td>13%</td>
<td>3%</td>
<td>3%</td>
<td>3%</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>50%</td>
<td>20%</td>
<td>21%</td>
<td>9%</td>
</tr>
</tbody>
</table>

Total number of students in the program: 694
Table 4 shows how classes are structured for each level of the program. Elementary classes meet two times a week for 30 minutes. Students are pulled out from academic classes for string class at the elementary level. Middle school classes meet three times a week at one of the middle schools and five times over each two-week period for 42 minutes at a second middle school. High school orchestras meet every day for 49 minutes with the exception of Chamber Orchestra, which only meets two times a week. There are sectionals for String Orchestra, Concert Orchestra, and Symphony Strings. String Orchestra has two or three sectionals each week while Symphony Strings has two sectionals each week. String Orchestra is divided into two separate periods with violas, cellos, and basses meeting in the first period and all violins meet in the second period. Sectionals are run by string teachers or by principal players in Symphony Strings. Student schedules are determined with input and cooperation of classroom teachers, so that students do not miss a complete academic class for string class.

Table 4 also shows the number of performances and pieces played per year for each level in the program. Elementary groups prepare six to eight short pieces for performance at three concerts during the school year. Middle school groups perform eight to nine pieces each year at four concerts and they play at an adjudicated regional festival. Concert Orchestra performs nine to ten pieces at four performances per year, including the Ohio Music Educators Association State Adjudicated Event. String Orchestra performs eight pieces at three performances per year. Symphony Strings and Chamber String Orchestra perform up to 16 large works and give four to six concerts annually, including the annual OMEA State Adjudicated Event and a national performance festival every other year. Some of the works contain multi-movements, and usually one is an accompaniment to a large choral work, such as the Mozart Requiem. Students at all levels have an opportunity to perform in the annual spring All-City Festival.
Table 4

Rehearsal Schedule

<table>
<thead>
<tr>
<th></th>
<th>Elementary level</th>
<th>Middle School level</th>
<th>High School level (9th – 12th grade)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>4th grade</td>
<td>5th grade</td>
<td>6th grade</td>
</tr>
<tr>
<td>Number of rehearsals per week</td>
<td>2</td>
<td>Middle School A: 5 (every two weeks)</td>
<td>5</td>
</tr>
<tr>
<td>Number of sectionals per week</td>
<td>0</td>
<td>0</td>
<td>2-3*</td>
</tr>
<tr>
<td>Length per rehearsal</td>
<td>30 minutes</td>
<td>42 minutes</td>
<td>49 minutes</td>
</tr>
<tr>
<td>Number of pieces performed per year</td>
<td>6-8</td>
<td>8-9</td>
<td>8</td>
</tr>
<tr>
<td>Number of performances per year</td>
<td>3</td>
<td>4 + 1 adjudicated festival</td>
<td>3</td>
</tr>
</tbody>
</table>

*Violas, cellos, and basses meet together during 1st period; violins meet during 2nd period
All beginning students rent instruments from area music stores. The lease-purchase plans allow parents to accumulate 100% of their monthly rental as equity towards the eventual purchase of an instrument by the time a student is ready for a full-sized instrument. Over time, all of the students will own an instrument. Beginning in 6\textsuperscript{th} grade, cellists and bassists keep their instruments at home to practice and can use a school instrument for a $40 annual fee. This policy continues through high school for cellists and bassists. The orchestra budget includes $2000 - $2500 for instrument upkeep.

The program is supported by school district funds and accounts receive the same line item amounts each year. The district has always funded these accounts, and when cuts occur, they occur equally across all curricular areas, including music. The program occasionally receives gifts from benefactors. The Upper Arlington Education Foundation, a group of alumni and community members, also contributes to an endowment fund. The district passed a tax levy last year to increase the amount of permanent funding for capital improvements by two million dollars. The high school orchestras now receive $20,000 each year to use for the purchase and repair of instruments and equipment such as storage units, chairs, and music stands. Though they receive funding each year, the amount varies due to fluctuation in interest rates.

The parent booster group, in monthly meetings, organizes a number of fundraising events each year to support orchestra trips and assists with the orchestra library. Originally one organization served the entire high school music program. However, the choral parents broke off in the late 1980s and currently the band is forming its own booster group.

String teachers usually travel to three schools each day and teach in at least three or four buildings. The director believes the staff should be involved in all levels of the program. Therefore, all teach on the elementary, middle school, and high school levels and team teach in
the middle school and high school classes each week. In order to establish team teaching, string teachers meet and consider the master schedule for the program. After recruitment of 3rd graders is completed in May, the number of students for all of the elementary schools is determined for the coming year. With the numbers in mind, assignments can be adjusted to equalize teaching loads. As the program has grown, additional staff has been needed and requested. The staff often teach overloads until more positions are allowed by the district personnel director.

Requirements for hiring new staff are set by the state of Ohio. The director, as the senior member of the staff, has had the opportunity to hire each of the other staff members. The district has always been cooperative in allowing him to make the final decision on whom to hire. They prefer to hire string specialists with successful teaching experience. At times, they have searched for a person with certain qualifications, such as a lower or upper string specialist. Also, applicants must display the characteristics of a team player who loves working with children, is an outstanding musician, and who has the best interests of the students in mind. Table 5 shows the current string teachers’ qualifications in Upper Arlington City Schools. Each teacher has an undergraduate and a graduate degree in music. The director values continued professional development activity/classes, because he is always striving to improve. In addition, all teachers employed in the state of Ohio are required to continue professional development activities.
Table 5

*Qualification of Teachers*

<table>
<thead>
<tr>
<th></th>
<th>Teacher A</th>
<th>Teacher B</th>
<th>Teacher C</th>
<th>Teacher D</th>
<th>Teachers E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bachelor</td>
<td>Bachelor of Music Education</td>
<td>Bachelor of Music in Theory/Composition</td>
<td>Bachelor of music in violin and string education</td>
<td>Bachelor of Music</td>
<td>Bachelor of Music</td>
</tr>
<tr>
<td>Master</td>
<td>Master of Arts in Music Education</td>
<td>Master of Arts in String Pedagogy</td>
<td>Master of Music Education and Conducting</td>
<td>Master of Music</td>
<td>Master of Arts</td>
</tr>
</tbody>
</table>
The curriculum is designed by all string faculty members and revised every five years as mandated by the school district. The goals and objectives are clearly listed in the curriculum (see Appendix B). The curriculum is divided into six levels from grade four to grade twelve. There are five performance objectives in each level: (a) demonstrate ability to produce an acceptable tone quality; (b) read and perform rhythm patterns with correct bow technique; (c) demonstrate ear training and listening skills; (d) read pitches and demonstrate understanding of music vocabulary; and (e) analyze music theory and music history. There are six goals listed under the heading “instructional objectives”: (a) tone quality; (b) read and perform rhythms with correct bowings; (c) finger patterns and scales; (d) ear training and listening skills; (e) music reading and terminology; and (f) music theory and music history. Under each goal of instructional objectives, detailed descriptions are provided. The difficulty increases with the level of advancement. For example, under the goal of tone quality, students in level I are required to perform with correct bow tension and demonstrate even bow speed while students in level V are required to demonstrate the relationship between bow weight, bow speed, bow placement, and each element’s individual effect on tone production.

Students earn their grades based on assessment, completing two playing tests per year, one in November and the other in late April. Middle school and high school students earn grades on the report card for each nine-week period. Students are assessed by their teacher on features of their playing such as set-up/playing position, posture, instrument position, left hand, and bow hold. In addition, assessment occurs during an ensemble performance in class on the ability to play with appropriate tone, correct notes, accurate intonation, accurate rhythm, and expression. Students complete a self-evaluation form, including information about preparation of their part, the differences between playing in an ensemble and playing in orchestra, their contribution to the
ensemble to the best of their playing ability, and what they would do differently next time.

Assessments for secondary level students include two written tests on history and theory, daily rehearsal grades, and two videotaped performance tests covering orchestral excerpts and scales. Students can earn performance points for their participation in school concerts. They can earn extra credit by performing on their orchestra instruments in a non-school related concert or by attending a live orchestra concert.

Observations of Instruction

Rehearsal routines vary by grade level. Elementary classes include ear-training and rhythm-training exercises using call-and-response echoing, flashcards for note reading, singing note names, clapping rhythms, and work on posture, left hand position, bow hand/arm, and theory. In middle school classes, students usually have one technique class and two ensemble rehearsals each week. The amount of time allocated to technique and repertoire varies depending upon performance demands and the concert calendar. At the high school level, Concert Orchestra and String Orchestra spend more time on technique, while the more advanced orchestras, Symphony Strings and Chamber Orchestra, spend more rehearsal time on repertoire. Teaching materials include Essential Elements 2000 Books 1-4 for elementary and middle schools, String Orchestra and Concert Orchestra. In Symphony Strings, the teacher uses a series of scale based warm-ups and exercises derived from the Galamian Scale Studies paired with a major/minor scale routine developed by the teacher. Additional class materials include rhythmic exercises from Essentials for Strings by Gerald Anderson and various historical and stylistic materials taken from numerous printed sources and websites (see Table 4). According to the director, the program provides much skill and technical training in each level, resulting in less diverse skill levels within each of the orchestras at the high school.
Teachers bring their instruments to demonstrate in classes and rehearsals, especially in elementary and middle school. In elementary classes, teachers demonstrate during every lesson as they introduce new skills. In middle school sectionals, teachers demonstrate bowing styles and fingerings. In high school, teachers demonstrate for stylistic purposes and to show bowing styles. More advanced students demonstrate for their peers at the teacher’s request.

The researcher observed four rehearsals: a 30-minute rehearsal at an elementary school, a 42-minute rehearsal at a middle school, a 49-minute rehearsal from the Symphony Strings, and a 49-minute rehearsal from the Concert Orchestra in the high school. Table 6 shows the summary of the teaching observation data. Upper Arlington teachers provide more informational instructions than directives. Teachers demonstrate and play with students to a greater extent at the elementary level than at the middle school or the high school. They ask more questions in the high school level than at the middle school and elementary levels. Tuning and announcement time varies between classes at each level, but the least time was spent tuning at the middle school where there are two string teachers. Issues addressed during a Symphony Strings Orchestra rehearsal included tempo, intonation, articulation/style, pitch accuracy, ensemble, and bow stroke/bowing. Concert Orchestra focused on ensemble, bowing, and articulation/style. At the middle school, teachers addressed issues related to ensemble, intonation, and bowing. Students sight-read a piece of music in preparation for learning a piece intended for performance. At the elementary level, the teacher focused on position and posture of left and right hands.
Table 6

*Frequency of Teacher and Student Behaviors by Ensemble*

Summary of Teaching Observation Data

<table>
<thead>
<tr>
<th>Ensemble</th>
<th>Teacher Information</th>
<th>Teacher Directive</th>
<th>Teacher Demonstration</th>
<th>Teacher Asks Questions</th>
<th>Feedback Positive (+)/Negative (-)</th>
<th>Students Play with Teacher</th>
<th>Students Play (Solo)</th>
<th>Students Play (Small Ensemble)</th>
<th>Students Play (Entire Ensemble)</th>
<th>Students Talk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symphony Strings Orchestra with Teacher D</td>
<td>30</td>
<td>13</td>
<td>1</td>
<td>5</td>
<td>12+/2-</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>8</td>
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<td></td>
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<td>7 minutes in tuning and announcements</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Issues addressed during rehearsal: Tempo, intonation, articulation/style, pitch accuracy, ensemble, bow stroke/bowing</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Concert Orchestra with Teacher D</td>
<td>17</td>
<td>8</td>
<td>0</td>
<td>3</td>
<td>6+</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>7</td>
<td>5</td>
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<td></td>
<td></td>
<td>12 minutes in tuning and announcements</td>
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<td></td>
<td></td>
<td>Issues addressed during rehearsal: Ensemble, bowing, and articulation/style</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>Middle School Orchestra with Teachers D and E</td>
<td>18</td>
<td>12</td>
<td>1</td>
<td>1</td>
<td>1+/-3-</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>6</td>
<td>2</td>
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<td></td>
<td>4 minutes in tuning and announcements</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Issues addressed during rehearsal: Ensemble, intonation, bowing, sight reading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary School Orchestra with Teacher C</td>
<td>7</td>
<td>2</td>
<td>3</td>
<td>0</td>
<td>2+/-1-</td>
<td>5</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>5</td>
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<tr>
<td></td>
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<td>5 minutes in tuning and announcements</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
<td>Issues addressed during rehearsal: Position and posture of left and right hands</td>
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</tr>
</tbody>
</table>
In Symphony Strings and Chamber Orchestra, the teacher prepares a CD recording for each student after work has begun on a piece. The teacher finds two or three different interpretations so that the students begin to understand how interpretations can differ. In class, time for listening is limited, but students are expected to listen to the complete CD recording on their own.

Each year, the program accepts a few special needs students in the beginning classes. Some students have physical problems and some have behavioral problems. The teachers work with classroom teachers and support staff to accommodate the students. Some of the students become good players while those students with physical difficulties may show marked improvement with their physical disability due to the physical activity of playing a stringed instrument.

*Enrichment Activities*

Table 7 shows the enrichment activities that students enjoy at all levels. Students have concert tours regularly. Seventh- and eighth-grade students travel to Chicago every other year in June. The high school Concert Orchestra and the Symphony Strings Orchestra tour on alternate years. All students enrolled in those orchestras are encouraged to go. Funding for the tour comes from specific fundraising events organized by the teachers and the boosters. Students may choose not to fundraise and pay for the trip themselves. According to the director, they occasionally receive donations earmarked specifically for the cost of touring.

Teachers encourage students to have private instruction after one year of class instruction, but the school system does not provide private lessons. Teachers may encourage lessons even earlier if a student shows exceptional ability. Less than 15% of elementary students, approximately 20-25% of middle school students, and about 35% of high school students receive
private instruction from professional orchestral players or college students. A higher percentage of students study privately in the more advanced high school orchestras than in the less advanced high school orchestras, and in elementary and middle school classes. Students or their parents pay for private instruction. The major reason that students in Upper Arlington do not take private lessons is lack of time rather than lack of money. Some of the students simply do not have time for lessons during the school year, but they study privately during the summer months.

The director stated that more Upper Arlington High Symphony Strings and Chamber Orchestra players have been selected for South Central Region and All-State Orchestras than any other public high school in the state for the past eight to nine years. In 2009, 13 students were selected for South Central Region Orchestra and six students played in the All-State Orchestra. The high school orchestras have also placed at least one student in the National High School Honors Orchestra (NHSHO) each of the past five times that NHSHO has occurred since being formed by MENC in 1986.

Three to four students from the program become music majors at colleges and conservatories each year. Many students continue to play their instruments in college and some receive a stipend to play in the college orchestra. The director reported that over 30 of his former students enjoy professional careers as music educators or performers. Three former students are in major orchestras including the National Symphony, the Pittsburgh Symphony, and the Cleveland Orchestra.

A strong relationship has existed between the Upper Arlington schools and the Columbus Symphony, but budget cuts have forced the Symphony to eliminate school outreach programs except for the youth orchestra. The string program continues to have a terrific working relationship with the ProMusica Chamber Orchestra. The director of the Upper Arlington string
program serves on ProMusica’s education committee. ProMusica Chamber Orchestra has established a Student Advisory Board that includes two Upper Arlington high school students. Each year, ProMusica Chamber Orchestra performs at the high school for the community and all proceeds are equally divided between the two organizations. In addition, the ProMusica Chamber Orchestra’s “Musicians in the Schools” program provides for professional musicians to hold master classes and sectionals with Upper Arlington students.

The director expressed that planning for and maintaining a successful string program requires as much work as building a program. Any good string program should be committed to providing unique learning experiences for its students.
### Table 7

**Enrichment Activities: 2008-2009 Academic Year**

<table>
<thead>
<tr>
<th>Enrichment Activities</th>
<th>Elementary level</th>
<th>Middle School level</th>
<th>High School level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>6th grade</td>
<td>7th – 8th grade</td>
<td>Concert Orchestra</td>
</tr>
<tr>
<td>Concert Tour</td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Private Lessons</td>
<td>About 15%</td>
<td>About 20-25%</td>
<td></td>
</tr>
<tr>
<td>Number of Students in South Central Region Orchestra</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
<tr>
<td>Number of Students in All-State Orchestra</td>
<td>--</td>
<td>--</td>
<td></td>
</tr>
</tbody>
</table>
Discussion

From my observation and conversation with the faculty members in Upper Arlington City Schools, I realized that the string program is highly organized. Similar to the results from Gillespie and Hamann in 1998, the beginning string classes start in Grade 4 in a heterogeneous setting. Although there is no full orchestra with woodwinds, brasses, and percussion in the middle school or high school, there are four string orchestras in the high school, which students can participate in according to their level of skill.

Comparing the number of performances given at each level, the elementary and middle school level students in the Upper Arlington string program have three and five performances each year. This is consistent with the number of performances reported by Gillespie and Hamann (1998). However, at Upper Arlington High School, the number of concerts performed each year ranges from three to six, exceeding the number of concerts reported in the study.

The retention rate in the Upper Arlington string program is relatively high compared to the results of the study by Gillespie and Hamann (1998). Seventy-one percent of students in the survey continued to enroll in the high school while the Upper Arlington string program has approximately 85% of students continuing in high school. Upper Arlington’s program serves 8% of the total high school student population, which exceeds the percentage reported in Gillespie and Hamann’s study.

The Upper Arlington string program has a well structured curriculum. Since the string faculty in Upper Arlington teach all levels of classes, they can create a curriculum with appropriate objectives and goals for grades 4-12. Based upon the curriculum, they can design consistent instructional plans for all levels.
With a well organized curriculum, areas for assessment can be easily identified. Students in the Upper Arlington string program earn grades based on performance and class participation, participation in out-of-school music activities, written tests, and concert attendance, similar to the methods of assessment reported by string teachers in Gillespie and Hamann’s study (1998). However, students in the Upper Arlington string program also do self-assessment, which encourages development of meta-cognition and reflection. I believe that self-assessment helps students learn and informs string faculty members’ teaching. Students not only receive comments from the teachers, but also learn how to evaluate their own playing. Eventually, they learn to improve their playing independently. String teachers better understand students’ thought processes from the results of self-assessment. Teachers may choose to modify the content and pacing of their teaching.

Some of the respondents in Gillespie and Hamann’s study (1998) taught string classes and choral, classroom, or band classes. I believe one of the factors that makes the Upper Arlington program outstanding is that the string faculty only teach strings and they can focus more on string teaching and professional development designed for string educators. In addition, all the string faculty members were string majors in college and each holds a Master’s degree in music.

From my observation, I noticed that the team teaching is very organized and effective. The effectiveness was evident in the efficiency of the tuning process. For example, two teachers in middle school orchestra used only four minutes for tuning more than 35 instruments (Table 6). Witt (1986) reported an average of seven to eight minutes for tuning. When the teachers are doing team teaching, teachers share podium time. The supporting teacher attends to individual students for brief reminders or plays with the students, while the main teacher gives instructions
and directives from the podium. When there are sectionals in the high school orchestras, teachers are able to take their students to a separate room for rehearsal. Students benefit by learning from different teachers, especially when upper and lower string specialists lead string sectionals. Physical space is not an issue for the rehearsal.

The issues addressed during rehearsals are closely related to the performance and instructional objectives stated in the curriculum (see Appendix B). At the elementary level, teachers focus on how well students create a good tone with correct left and right hand positions, concepts mentioned by Green (1966) and by Suzuki (1980). Students at the elementary level have finger placement markers on their instruments in the Upper Arlington program while most of the students in the middle school have removed the markers. From my observation, the finger placement markers serve as references for students, but the teachers address the intonation issues in verbal directives, as if no markers were provided. Table 6 shows that on the day that I observed, students in all levels did not have opportunities to play alone or to play in small ensembles during rehearsals. Rolland (1947) and Dillon and Kriechbaum (1978) recommend frequent opportunities for solo and small group performance during instruction in the development of a successful string program. The day of my observation was the day before the annual performance so it is understandable that teachers asked only the full class or ensemble to play.

Even though individual schools may not have balanced numbers of violins, violas, cellos, and basses, the number and distribution of instruments is balanced among all the elementary schools and among all the middle schools (Table 3a, Table 3b, and Table 3c). Table 3c illustrates the well-balanced distribution of instruments at the high school. Although instrument selection for third graders is primarily based on students’ interest, the string faculty provide suggestions
for some of the students who show interest in learning string instruments but do not have a strong preference for a particular instrument. By encouraging students to choose specific instruments, they create elementary string classes with diverse instrumentation designed to sustain well-balanced orchestras at middle school and high school levels.

The internal process of building a successful program starts from having experienced faculty design highly structured curricula in all levels. With a well-documented curriculum, string teachers refer to and develop their instructions from a unified source. Also, they can articulate the problems better during teaching because they have clear goals. One of the important factors of sustaining a successful program is the recruitment and retention of students in all levels. In order to have well-balanced orchestras in the high school level, faculty have to predict the retention rate of recruited students and make sure that the number of students playing violin, viola, cello, and bass reflects the standard instrumentation for a string orchestra. The Upper Arlington string program has a 40% drop-out rate in the first two years of instruction. Novice teachers may need to understand that the drop-out rate is typical in students’ early learning stages. The crucial part is to maintain a stable enrollment through the middle school and high school. Faculty team teach and sectionals are led by upper/lower string specialists. Also, in this highly successful program, students have opportunities to expand their horizons through participating in performance activities beyond school. Through these activities students enrich their experience with music and community awareness of the string program increases.

Through the research process, I have discovered that the Upper Arlington string program serves as a good model for novice teachers like me who want to establish a successful string program. I believe experienced teachers can appreciate the well-structured curriculum and the concept of giving students a unique learning experience through music instruction. The well-
structured curriculum also guides teachers in developing consistent instruction across elementary, middle school, and high schools. Through the live observations, I learned how to give instructions and directives, and I was amazed at how efficiently and effectively teachers fixed performance problems.

After this study I realized the importance of planning and communication among faculty. Further questions include: Are the processes of planning similar in band programs, choral programs, and urban public school orchestra programs? Does the planning affect the quality of the program? Are there differences in the effectiveness of instruction between team teaching models and lessons taught by a single instructor?

Future research may include examining an orchestra program from the perspectives of student orchestra members, parents, school administrators, and other faculty members in the school. In this study I observed teaching for one day. In a future study I would observe instruction in a sequence of classes dating from the day when a teacher introduces a new piece to the week of a scheduled performance. I would do this at elementary, middle school, and high school levels to analyze the instructional processes used to prepare a piece. The research methodology could also apply to study of band or choral programs. Comparisons among successful orchestra, band, and choral programs could be examined. Some elements may be common across successful music programs and some elements may be unique to band, orchestra, or choral programs. Information learned in this line of research can help novice band, choral, and orchestra directors to set up and maintain successful music programs.
REFERENCES


Young, P. (1986). *The string play: the drama of playing and teaching.* Austin, TX: University of Texas Press.
APPENDIX A: QUESTIONS TO DIRECTOR

About the program:
1. When did the program begin?
2. How many teachers, students, and orchestras did the string program start with?
3. How many teachers, students, and orchestras are in the program now?
4. Is there a chamber orchestra?
5. Who is eligible to get into the chamber orchestra?
6. Did the program grow steadily or rapidly? If it grew more rapidly at a certain time, when did it happen? How and why did it happen? If it is growing steadily, how does it grow each year?
7. How many students are on each instrument in your orchestra (elementary, middle school, Junior High School, and High School)?
8. Are there any students who dropped out of the program? If yes, what is the rate per year?
9. What are the common reasons that students drop out of the program?
10. What are the common reasons that students join the program?
11. Do you have regular parents’ meetings? If so, how often?
12. Do you have anything else you want to tell me about the program in general that I have not asked?

Finance:
1. Was the school system financially supporting the program from the start?
2. Was the program supported by other funding?
3. Is the school system or individual school financially supporting the program now?
4. Are there any external organizations or funding that support the program now?
5. Can you tell me how you plan for the budget for the program?

Orchestra booster organization:
1. Is there an orchestra booster organization in your program?
2. What is the history of the orchestra booster organization?
3. How does it support the orchestra program?
4. Do you have anything else you want to tell me about the orchestra booster organization in general that I have not asked?

Teaching assignments:
1. Can you describe the schedule for each teacher?
2. How many schools does each teacher serve?
3. How many schools does each teacher travel to every day?
4. How do you assign teachers to schools and classes?

Teachers’ training:
1. What were the requirements when the teachers were hired in this program?
2. What are the qualifications you have?
3. Do you engage in professional development activity/classes?
Recruitment:
1. When do you start recruiting?
2. Which grade are the students in when they start the program?
3. How do you promote the program and recruit students?
4. For the returning students, are there any auditions? If so, what is the procedure?
5. When is the audition?
6. Who are the jurors?
7. Do you have anything else you want to tell me about student recruitment in general that I have not asked?

Instruments:
1. Where do the students get their instruments from? Are they school provided, rented, or privately own?
2. What percentage of your students own their instrument?
3. Did the school purchase instruments (including music stands) when the program started? If so, what percentage of the budget is devoted to instrument purchase?
4. How much does the program spend for repairing instruments every year?

Scheduling:
1. What is the rehearsal schedule?
2. Are students pulled from academic classes, or are they in the block schedule?
3. How many times per week do the students meet for class?
4. How long are rehearsals/classes?
5. How many performances does each group have during a year?
6. What kind of performances do they do?

Curriculum:
1. Who set up the curriculum?
2. What are the goals and objectives for each orchestra and level under the program?

Rehearsal:
1. What is the rehearsal routine?
2. How many pieces do they play each year?
3. Which method books and repertoire do the students use and play?
4. Is there any regular sectional rehearsal? If yes, how often do the students have the sectional and who runs the sectional?
5. Do you bring your instrument to classes and rehearsals?
6. Do you demonstrate on the instrument in class?
7. How often do you demonstrate? In other words, do you demonstrate on the instrument only when the students are having problems with the playing?
8. Do you play recordings for students? If so, what are they and when do you play them?
Assessment:
1. How are students assessed?
2. How do the students earn grades?
3. How often are the assessments?
4. Do you have anything else you want to tell me about the scheduling, the curriculum, or assessment in general that I have not asked?

Student experience:
1. Do students have concert tours? If yes, how often?
2. What are the qualifications to join the tour?
3. Who supports the tour financially? Does the school, the parents, or external funding support the expenses?
4. Does the program provide private lessons? If yes, who pays the private teacher?
5. Who are the private teachers? Are they professional orchestra members, college students, or others?
6. Does the program have any cooperation with the local orchestras? If yes, what are the orchestras and what do they do?
7. At which level do students start their private lessons?
8. Do all students take private lessons? If not, how many students take private lessons?
9. What are the reasons that students do not take private lessons?
10. How do you deal with differences in skill levels in the orchestra when some students take private lessons and some do not?
11. Do you have special needs students in your program? If yes, what do you need to do in order to accommodate their needs?
12. Are there any students in all-state orchestra? If yes, how many?
13. Are there any students studying music in college? If so, how many?
14. Are there any students who are not music majors but actively play their instrument in college?
15. Are there any students who graduated in music in college? If so, how many?
16. Do you think your program gives a unique experience for your students?
17. Do you have anything else you want to tell me about the student experience in general that I have not asked?
APPENDIX B: UPPER ARLINGTON STRING PROGRAM CURRICULUM

ORCHESTRA, GRADE 4, LEVEL I,
INSTRUCTIONAL OBJECTIVES

PERFORMANCE OBJECTIVES
THE ORCHESTRA STUDENT WILL:
• Demonstrate ability to produce an acceptable tone quality.
• Read and perform rhythm patterns with correct bow technique.
• Demonstrate ear training and listening skills.
• Read pitches and demonstrate understanding of music vocabulary.
• Analyze music theory and music history.

INSTRUCTIONAL OBJECTIVES
GOAL ONE: TONE QUALITY
THE ORCHESTRA STUDENTS WILL:
a. Perform with correct bow tension.
b. Adequately rosin bow.
c. Demonstrate a straight bow motion using appropriate arm, wrist, and elbow motions.
d. Consistently demonstrate proper bow contact point between the bridge and fingerboard.
e. Demonstrate even bow speed.
f. Demonstrate forte and piano dynamic levels with good tone.

GOAL TWO: READ AND PERFORM RHYTHMS WITH CORRECT BOWINGS
THE ORCHESTRA STUDENTS WILL DEMONSTRATE:
a. a detaché (legato) bow stroke.
b. two-note slurs and ties.
c. bow lifts(‘).
d. proper right-hand pizzicato.
e. Rhythms using these note values: q, h, h., w,ee, and corresponding rests.
f. imitate rote bowing exercises using above (a. through e.).
g. left hand pizzicato
GOAL THREE: FINGER PATTERNS AND SCALES:
THE ORCHESTRA STUDENTS WILL PERFORM THE FOLLOWING SCALES AND FINGER PATTERNS:

- **a. violin-**
  - 1-octave D major
  - 1-octave G major
  - 1-octave C major

- **b. viola/cello-**
  - 1-octave D major
  - 1-octave G major
  - 1-octave C major

- **c. bass-**
  - 1-octave D major
  - 1-octave G major
  - 1-octave C major

- **d. violin/viola-**
  - 0 1 2 3 4
  - 0 1 2 3 4

- **e. cello-**
  - 0 1 3 4
  - 0 1 2 4

- **f. bass-**
  - 0 1 4
  - 0 1 2

  utilizes second and third positions

GOAL FOUR: EAR TRAINING AND LISTENING SKILLS
THE ORCHESTRA STUDENTS WILL:

- **a. echo level I rhythm patterns by clapping, plucking, or bowing**
- **b. echo level I melodic patterns by singing or playing.**
- **c. learns and performs several rote songs both open and fingered.**
- **d. sings note names, intervals, melodies and scales.**
- **e. match pitches by singing and playing.**
GOAL FIVE: MUSIC READING AND TERMINOLOGY
THE ORCHESTRA STUDENTS WILL:

a. Label and identify parts of the instrument and bow.
b. Identify by name the notes in the fourth grade level I finger patterns.
c. Label and identify the lines and spaces on the staff for the appropriate instrument.
e. Recognize, define, and apply terminology used in the method book (See Appendix I.)

GOAL SIX: MUSIC THEORY AND MUSIC HISTORY
THE ORCHESTRA STUDENTS WILL:

a. Identify half and whole steps aurally.
b. Identify note values of level 1 rhythms.
c. Name notes of scales for their instrument.
d. Identify composers of music being learned.
PERFORMANCE OBJECTIVES
THE ORCHESTRA STUDENT WILL:
• Demonstrate ability to produce an acceptable tone quality.
• Read and perform rhythm patterns with correct bow technique.
• Demonstrate ear training and listening skills.
• Read pitches and demonstrate understanding of music vocabulary.
• Analyze music theory and music history.

INSTRUCTIONAL OBJECTIVES

GOAL ONE: TONE QUALITY
THE ORCHESTRA STUDENTS WILL:
a. Demonstrate proper tone production on all strings.
b. Identify, describe, and demonstrate mezzo piano and mezzo forte
c. Demonstrate dynamic contrasts

GOAL TWO: READ AND PERFORM RHYTHMS WITH CORRECT BOWINGS
THE ORCHESTRA STUDENTS WILL DEMONSTRATE:
a. Staccato bowing
b. Three and four note slurs
c. Hooked bowing
e. Rhythms using the following rhythm patterns: q.e., yyyy, and corresponding rests.
f. Open string double stops
g. Accents
GOAL THREE: FINGER PATTERNS AND SCALES:
THE ORCHESTRA STUDENTS WILL PERFORM THE FOLLOWING SCALES AND FINGER PATTERNS:

a. all instruments:
   C, G, D, F, and A Major one octave
   D minor one octave

b. violins - two octave G and A Major by rote

c. violas/cellos - two octave C and D Major by rote

d. violin/viola - 0 1 2 3 4

e. cello - 0 1 2 3 4 (forward extension)
   01 234 (backward extension)

f. bass - half position

GOAL FOUR: EAR TRAINING AND LISTENING SKILLS
THE ORCHESTRA STUDENTS WILL:

a. Echo level II rhythm patterns.

b. Echo more complex melodic patterns.

c. Echo level II bowings and string crossings.

d. Tune each string to a reference pitch using fine tuners.

e. Tune using harmonics on cello and bass.

GOAL FIVE: MUSIC READING AND VOCABULARY
THE ORCHESTRA STUDENTS WILL:

a. Name notes in level II finger patterns and scales


e. Recognize, define, and apply terminology used in the method book (See Appendix I.)

GOAL SIX: MUSIC THEORY AND MUSIC HISTORY
THE ORCHESTRA STUDENTS WILL:

a. Place notes correctly on staff in own clef.

b. Identify the following key signatures: C, G, D, A, and F Major.

c. Recognize and correctly use key signatures in music being played.

d. Identify composers of music being learned.
PERFORMANCE OBJECTIVES
THE ORCHESTRA STUDENT WILL:
• Demonstrate ability to produce an acceptable tone quality.
• Read and perform rhythm patterns with correct bow technique.
• Demonstrate ear training and listening skills.
• Read pitches and demonstrate understanding of music vocabulary.
• Analyze music theory and music history.

INSTRUCTIONAL OBJECTIVES

GOAL ONE: TONE QUALITY
THE ORCHESTRA STUDENTS WILL:
a. Demonstrate basic vibrato motion.
b. Demonstrate crescendo and diminuendo.
c. Broaden dynamic range to include pp and FF.

GOAL TWO: READ AND PERFORM RHYTHMS WITH CORRECT BOWINGS
THE ORCHESTRA STUDENT WILL DEMONSTRATE:
a. Detached slurs.
b. Spiccato (near frog).
c. Accent/martelé bowings.
d. Tremolo.
e. Various eighth note triplet rhythmic patterns and corresponding rests
f. 6/8 meter and rhythms.
GOAL THREE: FINGER PATTERNS AND SCALES:
THE ORCHESTRA STUDENTS WILL:
a. Perform the following additional Major scales:
   Bass: Two-Octave F, and G.
b. Perform the following minor scales:
   All instruments: One-octave relative minors in their natural form.
c. Perform One-Octave chromatic scales on any given note.
d. Demonstrate the following finger patterns:
   Violin/Viola: 01 2 3 4
               01 2 3 4
   Cello: Reinforce backward and forward extensions.
   Bass: Reinforce half, second, and third positions.
e. Demonstrate level I finger patterns in higher positions.

GOAL FOUR: EAR TRAINING AND LISTENING SKILLS
THE ORCHESTRA STUDENTS WILL:
a. Distinguish major and minor arpeggios related to level II scales.
b. Identify basic melodic intervals.
c. Refine tuning of instruments using matching harmonics (Cello and Bass.)
d. Begin to tune instruments using pegs to a reference pitch (All instruments.)
GOAL FIVE: MUSIC READING AND TERMINOLOGY
THE ORCHESTRA STUDENTS WILL:
  a. Name notes in level II scales.
  b. Sight read examples using level 2 rhythms and meters.
  c. Play simple syncopated rhythms.
  d. Recognize, define, and apply terminology in method book and music being learned (See Appendix I.)

GOAL SIX: MUSIC THEORY AND MUSIC HISTORY
THE ORCHESTRA STUDENTS WILL:
  a. Write major and relative minor scales in natural form.
  b. Identify the placement of half-steps in major and minor scales.
  d. Identify the simple forms:
     AB
     ABA
     Theme and Variations
PERFORMANCE OBJECTIVES
THE ORCHESTRA STUDENT WILL:
• Demonstrate ability to produce an acceptable tone quality.
• Read and perform rhythm patterns with correct bow technique.
• Demonstrate ear training and listening skills.
• Read pitches and demonstrate understanding of music vocabulary.
• Analyze music theory and music history.

INSTRUCTIONAL OBJECTIVES

GOAL ONE: TONE QUALITY
THE ORCHESTRA STUDENTS WILL:
  a. Demonstrate increased use of basic vibrato motion.
  b. Refine tone production with greater control of bow speed and distribution.
     c. Demonstrate the relationship between bow weight, bow speed, bow placement, and their individual effects on tone production.

GOAL TWO: READ AND PERFORM RHYTHMS WITH CORRECT BOWINGS
THE ORCHESTRA STUDENTS WILL DEMONSTRATE:
  a. Rapid string crossings with separate bows.
  b. Tremolo.
  c. Trills.
  d. Double stops that are fingered with an open string.
  e. Beginning spiccato at the middle of the bow.
  f. Understanding of applications of basic strokes to various musical styles.
GOAL THREE: FINGER PATTERNS AND SCALES:
The Orchestra Students Will:
A. Perform the following additional scales:
   violin/viola: one 1-octave chromatic scale, three 2-octave major scales, one 3-octave major scale
   cello: one 1-octave chromatic scale, two 2-octave major scales
   bass: one 1-octave chromatic scale, two 2-octave major scales
b. Play in these additional positions:
   violin/viola-third position, fifth position (introduce)
   cello-second position, third position, fourth position
   bass-fourth position, fifth position

GOAL FOUR: EAR TRAINING AND LISTENING SKILLS
THE ORCHESTRA STUDENTS WILL:
a. Tune instrument in ensemble setting.
b. Begin to improvise simple melodies.
c. Play simple double stops.
d. Identify simple harmonic intervals.

GOAL FIVE: MUSIC READING AND VOCABULARY
THE ORCHESTRA STUDENTS WILL:
a. Sight read music in simple and easy compound meters.
b. Conduct in meter (in 2 and 6).
c. Define the vocabulary in music being learned.

GOAL SIX: MUSIC THEORY AND MUSIC HISTORY
THE ORCHESTRA STUDENTS WILL:
a. Identify major key signatures up to four flats and four sharps.
b. Identify written intervals of unison through fifth, and octave.
c. Perform repertoire representative of major periods of orchestral literature.
PERFORMANCE OBJECTIVES
THE ORCHESTRA STUDENT WILL:
• Demonstrate ability to produce an acceptable tone quality.
• Read and perform rhythm patterns with correct bow technique.
• Demonstrate ear training and listening skills.
• Read pitches and demonstrate understanding of music vocabulary.
• Analyze music theory and music history.

INSTRUCTIONAL OBJECTIVES

GOAL ONE: TONE QUALITY
THE ORCHESTRA STUDENTS WILL:
a. Vary vibrato speed and width.
b. Maintain given dynamic levels with a variety of bow speeds.
c. Change tone quality and dynamic levels by varying bow speed, weight, and bow placement.

GOAL TWO: READ AND PERFORM RHYTHMS WITH CORRECT BOWING
THE ORCHESTRA STUDENTS WILL DEMONSTRATE:
a. Rapid string crossings with slurs.
b. Sul tasto.
c. Ponticello.
d. Triple stops (chords).
e. The ability to select appropriate bowings.
GOAL THREE: FINGER PATTERNS AND SCALES
THE STUDENT ORCHESTRA STUDENTS WILL:
a. Perform the following additional scales:
   violin/viola: one 2-octave minor, three 3-octave major
cello: one 2-octave minor, four 2-octave major
bass: one 2-octave minor, three 2-octave major
b. play in the following additional positions:
   violin/viola- second and fourth
cello- thumb
bass- thumb

GOAL FOUR: EAR TRAINING AND LISTENING SKILLS
THE ORCHESTRA STUDENTS WILL:
a. Imitates melodic lines within range of an octave.
b. Identifies melodic intervals within range of an octave.
c. Identifies by ear all orchestral instruments.

GOAL FIVE: MUSIC READING AND VOCABULARY
THE ORCHESTRA STUDENTS WILL:
a. Sight read more difficult music (e.g. OMEA Class C and B High School String and Full Orchestra).
b. (Viola) Read treble clef.
c. (Cello) Read tenor clef.
d. Defines the vocabulary in music being learned.

GOAL SIX: MUSIC THEORY AND MUSIC HISTORY
THE ORCHESTRA STUDENTS WILL:
a. Identify written intervals, unison through octave.
b. Describe texture: homophonic, polyphonic.
c. Compose four bar melody.
d. Identify stylistic characteristics of musical periods.
e. Identify composers by period.
f. Name periods/dates of music history.
ORCHESTRA, GRADES 11 & 12, LEVEL VI,
INSTRUCTIONAL OBJECTIVES

PERFORMANCE OBJECTIVES
THE ORCHESTRA STUDENT WILL:
• Demonstrate ability to produce an acceptable tone quality.
• Read and perform rhythm patterns with correct bow technique.
• Demonstrate ear training and listening skills.
• Read pitches and demonstrate understanding of music vocabulary.
• Analyze music theory and music history.

INSTRUCTIONAL OBJECTIVES

GOAL ONE: TONE QUALITY
THE ORCHESTRA STUDENTS WILL DEMONSTRATE:
a. Refined bow control and vibrato, resulting in a high degree of musicality.

GOAL TWO: READ AND PERFORM RHYTHMS WITH CORRECT BOWINGS
THE ORCHESTRA STUDENTS WILL DEMONSTRATE:
a. Sautillé.
b. Ricochet.
c. Appropriate bowing styles for different periods.

GOAL THREE: FINGER PATTERNS AND SCALES:
THE ORCHESTRA STUDENT WILL PERFORM:
a. All major and minor scales up to four sharps and four flats.
b. In the following additional positions:
   (Violin and Viola) Sixth, seventh, and above seventh.
   (Cello and Bass) Thumb.
GOAL FOUR: EAR TRAINING AND LISTENING SKILLS
THE ORCHESTRA STUDENTS WILL:

a. Take melodic dictation.
b. Take rhythmic dictation.
c. Identify intervals by number and quality, unison through fifth.
d. Identify changes in key.

GOAL FIVE: MUSIC READING AND VOCABULARY
THE ORCHESTRA STUDENTS WILL:

a. Conduct a group from simple orchestral score.
b. (Violin) Read 8va.
c. (Cello) will Read treble clef.
d. (Bass) will Read tenor clef.
e. Sightread more complex rhythms, including syncopation (e.g. Class B and A String and Full Orchestra)
f. Define the vocabulary in music being learned

GOAL SIX: MUSIC THEORY AND MUSIC HISTORY
THE ORCHESTRA STUDENTS WILL:

a. Identify simple chord progressions.
b. Describe circle of fifths.
c. Identify written intervals, unison through octave, by number and quality.
d. Identify musical periods heard.
e. Identify selected composers by period and style.
# APPENDIX I

## Method Book Terminology

<table>
<thead>
<tr>
<th>Term</th>
<th>Description</th>
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<tbody>
<tr>
<td>Accidental</td>
<td>Natural, sharp or flat not in key signature. Remains in effect for the full measure.</td>
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<tr>
<td>Allegro</td>
<td>Fast, bright tempo.</td>
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<tr>
<td>Andante</td>
<td>Slow, walking tempo.</td>
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<tr>
<td>Arco</td>
<td>Play with the bow on the instrument.</td>
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<tr>
<td>Arpeggio</td>
<td>A chord whose pitches are played one at a time.</td>
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<tr>
<td>Balance Point</td>
<td>Point on the bow where weight is equally distributed.</td>
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<tr>
<td>Bar Lines</td>
<td>Divide the music staff into measures.</td>
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<td>Beat</td>
<td>The pulse of music.</td>
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<tr>
<td>Bow Lift (')</td>
<td>Lift the bow and return to its starting point.</td>
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<tr>
<td>Chromatics</td>
<td>Notes altered with sharps, flats, and naturals.</td>
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<td>Common Time</td>
<td>Another way to write 4/4.</td>
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<td>D.C. al Fine</td>
<td>Play until D.C. al Fine, go back to the beginning and play until you see Fine.</td>
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<td>Double Bar</td>
<td>Indicates the end of a piece of music.</td>
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<td>Down Bow</td>
<td>Move the bow away from your body.</td>
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<td>Duet</td>
<td>Composition for two players.</td>
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<td>Dynamics</td>
<td>Tells us what volume to play or sing.</td>
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<td>1st &amp; 2nd endings</td>
<td>Play the first ending the first time, skip to 2nd ending on repeat.</td>
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<td>Flat</td>
<td>Lowers the sound of note(s) a half-step.</td>
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<td>Forte</td>
<td>Play loudly.</td>
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<tr>
<td>Half-Step</td>
<td>Smallest distance between two notes.</td>
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<td>Harmony</td>
<td>Two or more different pitches sounding at the same time.</td>
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<tr>
<td>Interval</td>
<td>Distance between two notes.</td>
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<tr>
<td>Key Signature</td>
<td>Tells us what notes to play with sharps or flats for the entire piece.</td>
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<td>Ledger Lines</td>
<td>Extend the music staff.</td>
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<td>Measure</td>
<td>Section of music separated by bar lines.</td>
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<td>Moderato</td>
<td>Moderate tempo.</td>
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<tr>
<td>Term</td>
<td>Description</td>
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<td>-----------------------------------------------------------------------------</td>
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<tr>
<td>Multiple Measures Rest</td>
<td>Tells us how many measures to count and rest.</td>
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<td>Natural Sign</td>
<td>Cancels sharps or flats and remains in effect for the full measure.</td>
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<tr>
<td>Notes</td>
<td>Tell us how high or low to play, and how long to play.</td>
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<td>Piano</td>
<td>Play softly.</td>
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<td>Pizzicato</td>
<td>Pluck the strings.</td>
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<td>Quarter Note</td>
<td>One beat of sound.</td>
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<tr>
<td>Quarter Rest</td>
<td>One beat of silence.</td>
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<tr>
<td>Rehearsal Numbers</td>
<td>Measure numbers in squares above the staff.</td>
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<tr>
<td>Repeat Sign</td>
<td>Go back to the beginning and play the music again.</td>
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<td>Rests</td>
<td>Count silent beats.</td>
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<td>Round</td>
<td>Musical form where performers play the same melody and enter at different times.</td>
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APPENDIX C: OBSERVATION FORM

<table>
<thead>
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<th>Observation Form</th>
<th>Date:</th>
<th>Time:</th>
<th>Level:</th>
<th>Teacher:</th>
<th>Time Interval (Min)</th>
<th>Teacher Information</th>
<th>Teacher Directive</th>
<th>Teacher Demonstration</th>
<th>Teacher Asks Questions</th>
<th>Feedback</th>
<th>Students Play with Teacher</th>
<th>Students Play (Solo)</th>
<th>Students Play (Small Ensemble)</th>
<th>Students Play (Entire Ensemble)</th>
<th>Students Talk</th>
<th>Remark</th>
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