Texas Music Education Research 2007

Reports of Research in Music Education
Presented at the Annual Meeting of the Texas Music Educators Association
San Antonio, Texas, February, 2007

Robert A. Duke, Chair TMEA Research Committee
School of Music, The University of Texas at Austin

Edited by: Edited by Mary Ellen Cavitt,
Texas State University, San Marcos

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Edited by
Mary Ellen Cavitt, Texas State University—San Marcos

Retention of Membership in High School Music Ensembles

Vicki D. Baker
The University of Texas at Arlington

The future of our high school music ensembles potentially may be in jeopardy as greater demands are being placed on students to take additional core subjects to satisfy graduation requirements. In addition, more students appear to be seeking to acquire college credits while still in high school by taking Advanced Placement (AP) and International Baccalaureate (IB) courses. When these factors are combined with the unique challenges presented by block scheduling, students may find it increasingly more difficult to maintain membership in music ensembles throughout high school.

On November 17, 2006, the Texas State Board of Education gave final approval to a plan whereby the Recommended High School Graduation Program and the Distinguished Achievement Program would be increased to 26 credits, and students would be required to earn four credits in each of the four core subjects: English language arts, social studies, mathematics, and science. The four credits in English language arts and social studies were already required under the current plans. This "4 X 4" plan, effective during the 2007-2008 school year, means that students under the Recommended High School Graduation Program would have 3.5 elective credits and those under the Distinguished Achievement Program would have 2.5 elective credits. The limited number of elective credits under this plan compounds the challenge music students currently face in scheduling their music ensemble classes, as well as other elective courses.

An additional threat to the retention of music ensemble members is the increasing number of Advanced Placement (AP) classes students take in order to receive college credits while in high school. The AP program, sponsored by the New York City-based College Board, is designed around 35 tests including 20 subjects.   In 2005, among the nation's 2.7 million high-school seniors, 610,00—or 23%—had taken at least one AP exam. That represents an increase from 2000, when 405,000—15.9%—had taken at least one AP exam (Jost, Katel, Clemmitt, & Prah, 2006). Colwell (1990) points out that college-bound students are enrolling in AP classes in increasing numbers because college admissions policies favor students with AP courses on their transcripts and some high schools give additional weight to AP classes when computing grade-point average.   Further, most college and universities will give students course credit if they earn a score of 3 or higher on an AP exam (scores range 1 to 5). Colwell goes on to explain that often students enroll in as many AP courses as possible, with 40 to 50% of AP students being in the 9th, 10th, and 11th grades. Approximately 10 times as many high school students currently participate in the AP program as in 1980 (Jost et al., 2006).

This national trend is evident in Texas schools as well. The Texas Education Agency (2006) reports that 112,263 students in Texas schools took 204,403 AP exams in 2004-05, an increase of 11% from the previous year. A total of 1,137 Texas schools (50.4%) with Grade 9-12 enrollment had one or more students complete one or more AP classes, compared to 158 schools in 1992-93.

Another university preparatory program that is growing in popularity in the United States is the International Baccalaureate (IB) program. Students in this program are required to follow a specific rigorous curriculum encompassing six subject areas, with an emphasis on foreign cultures and interdisciplinary study. IB exams, which are administered at the end of each two-year course, are graded on a 1 to 7 scale and some colleges will offer credit for scores of 5, 6, or 7. The IB program is currently offered in 623 schools in the United States (Cavanagh, 2006). According to the Texas Education Agency (2006), a total of 1,487 students in 23 Texas public schools took 3,941 IB examinations in 2004-2005. This represents an increase from the 429 students in 11 Texas schools who took 910 IB exams in 1994-95.

The increase in AP and IB enrollment is indicative of students' increasing desire to obtain college credits while still in high school. Nationally, there has been growth in programs that allow students to earn college credits while still in high school. Studies indicate that 32 states now have policies permitting students to earn college credit while enrolled in high school (Olson, 2006). Texas House Bill 1, passed in 2006, requires that by the fall of 2008, all Texas school districts permit students to earn the equivalent of 12 hours of college credit during high school.

What is the impact of AP and IB curriculum on music ensembles? The demands on the high school students' schedules to "get ahead" by gaining college credit leaves fewer elective credits available in their schedules. Additionally, if the AP or IB class is only offered once, and if that class conflicts with a music ensemble class, it is possible that the student will elect to take the AP or IB class rather than the music class.

The trend of schools to adopt block scheduling over the past decade has led to attrition in school music ensembles, as well. A study conducted by Rohner (2002) revealed that 44% of high schools and 30% of middle schools in the United States are on some type of block schedule. He found that 73% of schools on the pure 4 x 4 block reported a drop in enrollment in bands and orchestras by an average of 31% from enrollment prior to the block schedule. Further, Rohner noted that in schools on block schedule which permit music classes to meet 45 minutes each day, enrollment increased at 30% of the schools, declined at 50% of the schools, and remained unchanged at 20% of the schools. He stated that many directors maintain that conflicts between music classes and AP courses, as well as other electives, including other music classes, negatively affect enrollment.

A survey of music educators in Kentucky, Indiana, and Michigan (Blocher, 1997) found that block scheduling led to a decrease in student enrollment in band, chorus, and orchestra classes. In Kentucky, 69% of music teachers reported a decrease in student enrollment after adopting block scheduling. Scheduling conflicts were cited as the primary reason for the decline in membership, with 51% of these teachers indicating schedule conflicts with elective courses and 58% of them reporting schedule conflicts with AP classes. Among Indiana music teachers, 45% reported decreased student enrollment, with 21% reporting schedule conflicts with elective courses and 24% indicating schedule conflicts with AP classes. In Michigan, 67% of the music teachers reported a decline in student enrollment due to scheduling conflicts, with 26% reporting schedule conflicts with elective courses, and 47% indicating scheduling conflicts with AP classes. Difficulty in retaining 11th- and 12th-grade students in performance classes after adopting block scheduling were reported by 46% of Kentucky teachers, 21% of Indiana teachers,

and 43% of Michigan teachers. In addition, 57% of music teachers in Michigan and 56% of music teachers in Indiana reported that students had difficulty in enrolling in more than one performance class.

Meidl (1997) also points to the potential negative impact block scheduling can have on performance-based music programs. He states:

> Although there are many factors that influence student enrollment and continued participation in performance-based music classes, the single greatest help or hindrance is probably the school-day schedule. Students need to be able to comfortably elect choir, band, or orchestra in their high school academic experience. (p. 10)

In a survey conducted by Meidl (1997) of high school music teachers from 13 states who had recently adopted block scheduling, he found that 69% of the teachers had experience a decrease in student enrollment, primarily due to scheduling conflicts.

Method

The purpose of this study was to investigate ways current students have addressed demands placed on their schedules by required classes in order to participate in multiple music ensemble classes throughout high school. Participants ($N = 443$) included freshman music majors, ages 21 years or younger, from 10 Texas universities who had attended a public or private high school. These participants were selected on the basis of their recent high school experience, as well as the likelihood that they, as music majors, took multiple credits of music ensembles.

The researcher-designed survey was examined for validity and suggestions for changes by five experienced music educators. After a pilot study, additional revisions were made, resulting in the final version of the survey. Participants completed the survey that included questions regarding the grade levels they were enrolled in music ensembles, the total number of music ensemble credits received in high school, classes taken outside of the traditional school day, type of high school schedule, and the number of AP classes taken. In addition, participants were asked to list any obstacles they faced in arranging their schedule and identify the person that provided them with the most assistance in scheduling classes. Participants were also asked to list reasons for taking band, choir, or orchestra classes in high school. Demographic information was collected regarding gender, age, major, primary instrument, public versus private school, and GPA upon graduation of high school.

Results

Participants ($N = 443$) consisted of 258 males and 185 females. The majority of the students were 18 years of age ($n = 304$), with the next largest age group being 19 ($n = 105$). Major areas of study included: music education ($n = 220$); music performance ($n = 116$); music education and performance ($n = 19$); music composition ($n = 23$); jazz studies ($n = 19$); church music ($n = 8$); music business ($n = 4$), and music education and composition ($n = 4$). Eight subjects listed other music-related areas of study and 21 participants selected "other" but did not specify their major. Only participants attending public high schools ($n = 414$) and private high schools ($n = 29$) were included in the study. Students who were home-schooled were exempted because the questions regarding scheduling and ensemble membership did not apply to them. Eighty-nine percent of the participants ($n=397$) reported attending Texas high schools.

Respondents reported a total of 27 different types of school schedules. Some type of block scheduling was reported by 192 participants, with the most frequent response being AB block (n = 164), followed by accelerated block (n = 20). Other types of block scheduling listed by respondents included modified, rolling, 4 blocks, and combination. Nine different period-based schedules were reported by a total of 210 participants, with the most frequently-reported schedule being 7-period (n = 153), followed by 8-period (n = 21) and 6-period (n = 16). Other schedules ranged from 4 periods to 12 periods. Twenty students reported that their schools changed from block scheduling to a period schedule while they were in high school. Other types of schedules reported included trimester, split, self-study, and varied. A "zero" period was reported by 143 participants.

Grade Point Average (GPA) of participants was reported both on the grade point system and on the numeric average system. Among those using the grade point system, the majority of respondents' reported GPAs ranged from 3.0 and 3.99 (n = 251). Eighty-seven participants reported a GPA ranging from 4.0 to 4.99. Among participants whose GPAs were reported as a numeric average, the majority of students (n = 37) reported a GPA ranging from 90 to 99.9. In terms of the effect membership in musical ensembles had on their GPA, 283 participants reported that it had a positive effect, 27 reported a negative effect, 128 reported no effect, and 5 did not respond to the question.

The number of respondents taking AP classes rose steadily from the 9th through the 12th grade (see Table 1). A total of 179 participants (40%) reported taking AP classes in 9th grade, and the total increased with each grade level; 226 (51%) in 10th grade, 319 (72%) in 11th grade, and 341 (76%) in 12th grade. In addition, the number of students who reported taking 4 or more AP classes steadily rose from 45 (10%) in 9th grade to 111 (25%) in 12th grade.

Table 1
Number of AP Classes by Grade Level

Grade Level	Number of AP classes				
	0	1	2	3	4+
9	265	51	47	36	45
10	218	70	57	46	53
11	125	81	86	82	70
12	103	83	79	68	111

Participants were asked to indicate which grade levels they were in band, choir, and orchestra classes, beginning in 4th grade and ending in 12th grade (see Table 2). In band, 5 participants reported being members in 4th grade and 41 participants in 5th grade, but in 6th grade, 268 participants reported membership. Band membership peaked in grade 8 with 298 participants, then steadily declined to 282 in 12th grade. In choir, membership began to rise from 6th grade with 81 participants and continued a steady growth through 12th grade with 131 participants. Orchestra membership began with 14 students in 4th grade and rose steadily through 12th grade with a total of 101 members.

Table 2
Music Ensemble Membership by Grade Level

Grade Level	Number of participants enrolled			
	Band	Choir	Orchestra	Total
4	5	87	14	106
5	41	92	35	168
6	268	81	51	400
7	296	86	54	436
8	298	90	61	449
9	290	93	65	448
10	290	95	79	464
11	287	107	89	483
12	282	131	101	514

Respondents were also asked to indicate how many music ensemble classes they took during grades 9 through 12 (see Table 3). In grade 9, a total of 392 participants (88%) reported taking at least one music ensemble class and by grade 12 that number had increased to 415 (93%). In addition, 28 participants reported taking three or more music ensemble classes in 9th grade, 45 participants in 10th grade, 84 participants in 11th grade, and 140 participants in 12th grade. When asked if their band, choir, or orchestra class was double-blocked, 113 participants responded positively, 199 responded negatively, 126 indicated it was non-applicable, and 5 did not respond to the question. When asked who was the primary person responsible for assisting them with planning their schedule of classes, the majority of participants ($n = 305$) reported their school counselor, followed by 48 participants who listed their director, 34 participants who listed "self," and 13 participants listed counselor and director.

Table 3
Number of Music Ensemble Classes Taken by Participants by Grade Level

Grade Level	Number of ensemble classes			
	0	1	2	3+
9	51	217	147	28
10	40	207	151	45
11	27	179	153	84
12	28	136	139	140

Most importantly, a total of 164 (37%) of participants reported encountering obstacles in scheduling music ensemble classes. When asked to list the scheduling obstacles (see Table 4), out of 155 responses, 123 (79%) were related to some type of scheduling conflict with other classes. Thirteen participants listed lack of room in their schedule as an obstacle to enrolling in music ensemble classes and six participants indicated difficulties with counselors.

Table 4
Obstacles to Scheduling Music Ensemble Classes (n = 155)

Obstacles to scheduling	Number of students
Scheduling conflicts with other classes	66
Conflict with AP classes	44
Conflict with athletics	7
Conflict with other music/fine arts classes	6
Not enough credits/room in schedule	13
Required to double-block band class	3
Incompetent counselors	3
Pressure from counselors to choose between choir and band/to take more AP classes/only take 1 band class	3
Had to take summer school/night school to be in orchestra	2
No orchestra class offered	2
Music classes scheduled during lunch	2
Extra ensemble rehearsals vs. AP load	2
Affected class rank	1
Conflict with work hours	1
Problem with transportation to rehearsals	1
Orchestra not considered by school to be important	1
Placement in correct band class	1

Fifty-five participants reported having to take classes outside of the regular school day in order to have room in their schedule for music ensemble classes. Thirty-nine respondents indicated that they attended summer school, taking a total of 75 courses (see Table 5). The summer school classes that were reported most frequently included economics (18), government (12), speech (9), health (7), and history (7).

Twenty participants reported that they took a total of 30 correspondence courses (see Table 6). The correspondence classes that participants took most frequently included health (4), physical education (4), economics (3), and government (3).

Table 5
Summer School Courses Taken by Participants

Summer school courses	Number of students
Algebra 1	1
Algebra 2	1
BCIS	2
Biology	1
Economics	13
English	4
Geography	3
Geometry	3
Government	12
Health	7
History	7
Physical Education	5
Physics	3
Social Studies	1
Spanish	3
Speech	9

Note. Thirty-nine students took a total of 75 summer school courses.

Table 6
Correspondence Courses Taken by Students

Correspondence courses	Number of students
BCIS	2
Career/Life Management	1
Comm. Application	1
Economics	3
Government	3
Health	4
History	3
Law and Justice	1
Math	2
Music Theory	1
Physical Education	4
Science	2
Speech	1

Note. Twenty students took a total of 30 correspondence courses.

In a free-response format, participants were asked to list the reason(s) they took band, choir, or orchestra in high school. Their responses were assigned to one of five categories for purposes of reporting. Out of the 793 responses, 346 (43%) were assigned to the category labeled "Pleasure," which included an expression of love, like, or enjoyment of music and performing. The second largest category was "Social" ($n = 174$), which focused on fun, friends, and a sense of community. A total of 155 responses fell within the "Academic/Career" category, 95 responses were assigned to the "Self-Improvement" category, and 23 responses were related to the "Program."

Table 7
Reasons for Music Ensemble Membership

_____

Reason for membership	Number of participants
Pleasure	
Love/like/enjoy music	145
Love/like/enjoy performing	153
Passion	19
Enjoy competition	17
"Music is my life"	12
Social	
Fun	65
Friends	52
Sense of community	30
Family involvement in music	20
Travel	7
Self-Improvement	
Character development	36
Learning something new	28
Therapeutic	22
Positive impact on self-esteem	9
Academic/Career	
Career preparation	75
Good at performing	22
Interested in music	21
Enjoy learning about music	16
Fine Arts/Physical Education credit	16
Improved GPA	5
Program	
Director	11
Great program	9
Enjoyable middle school ensemble experience	3

Note. Three hundred and ninety-seven participants provided a total of 793 responses.

Some of the students' responses include the following:

"For me it was a passion to fill in the 'hole' that my hearing impairment took from me."

"I found choir to be an expressive outlet to emotions. Discovering that I was good at something allowed me to believe my life could be more than just getting a nine to five job after graduating. Choir placed a desire in my heart to share the blessing and hope."

"I grew up in an environment where the music programs were exceptional. It was fun, and overall my passion and a great outlet. Most my friends were in some sort of music program, but that was the added bonus to my former reasons. Music is incredible. Period."

"I have always loved to play music. Participating in band in high school helped me decide what I want to do for a career. It also motivated me to do well in school."

"I love music. It allowed me to keep family tradition. I was able to travel. I was able to gain a deeper passion for music education. It is where I found my voice."

"I loved it-my friends were in it. I was good at it. I think if I would have left band my entire high school experience would have changed. Band also put me into a bubble where I didn't encounter peer pressure with drugs or beer because my band friends weren't in that. That I loved."

"I loved music and it gave me a positive thing to look forward to everyday. Our school choir was very recognized and had many opportunities (travel). Choir was my favorite part of my high school career."

"I took band in high school because I love playing the clarinet. Nothing else makes me as happy. I also had a lot of friends, and I had a lot of fun. I learned many things about leadership."

"I took band in high school because it was a great source of pride for me. Being able to achieve something non-academic was very fulfilling. In addition, I suffer from clinical depression-music helped me deal with negative emotions in a positive way."

"Music is like breathing for me. It is a chance for me to express myself and it's so amazing to grab a piece of music and be able to read it like a book and sing it without ever hearing it before. Choir helped tune my skills at sight-singing and partaking in choir and the school musicals was time consuming, but so worth it because it gave me something to do and it is something I love to do."

"Playing an instrument takes skill and I liked the challenge. I love music and wanted to learn to play more. Marching band takes discipline and I like competition. I also like to sing, learn and be exposed to different things."

"Provided relaxation after class, gave a sense of security, discovered myself and what I wanted to do in life, made me appreciate things more, opened my mind."

"We had an incredible director that really enjoyed the kids, so in turn we wanted to pursue music. It was a passion of mine, from an early age. You can always improve in music, so I wanted to continue."

Discussion

A total of 213 participants were on block scheduling for either part or all of their high school years. Eighty-four of the 164 students who reported obstacles to scheduling music classes were on some type of block schedule. Sixty-four participants on block scheduling indicated that conflicts with other classes was their primary obstacle in scheduling music ensemble classes. This finding is consistent with the studies by Blocher (1997) and Rohner (2002) that found that block scheduling negatively affects music ensemble enrollment due to conflicts with other classes.

The majority of participants ($n = 283$) reported that membership in music ensembles had a positive effect on their GPA. It is interesting to note that the average number of ensemble classes taken by these participants from grades 9 through 12 was 6.54, compared to the average of 8.14 classes taken by the 27 participants that reported a negative effect on their GPA. Apparently, the more ensembles the students were enrolled in, the greater the negative effect. The participants taking the fewest average number of ensemble classes (5.7) reported no effect on their GPA, which seems to indicate that the fewer the music ensemble classes taken, the less impact on the GPA.

The number of participants enrolled in AP classes increased from 40% in 9th grade to 51% in 10th grade, 72% in 11th grade, and 76% in 12th grade. In addition, the number of students taking four or more AP classes increased from 45 participants in 9th grade to 111 in 12th grade. These findings are in keeping with the study by Colwell (1990) that indicated college-bound students are enrolling in AP classes in increasing numbers and 40 to 50% of AP students are in the 9th, 10th, and 11th grades. Additionally, students indicated that they were encouraged by their counselor to choose AP classes when they conflicted with music ensemble classes. As one participant stated, "The school encouraged you not to take it [orchestra] and the time orchestra was offered conflicted with taking AP classes; most kids dropped orchestra or another music class to take AP classes."

Band enrollment rose sharply from 41 participants in 5th grade to 268 in 6th grade. This is an indication that most school band programs begin in the 6th grade. It is interesting to note that band enrollment peaked at 298 in 8th grade and steadily declined to an enrollment of 282 participants in 12th grade. However, both choir and orchestra enrollment steadily increased from grade 6 through grade 12. Perhaps the increased choir enrollment in high school can be explained by the fact that students are not required to have a certain level of mastery on an instrument, unlike band or orchestra. The increase in orchestra enrollment could possibly be a result of band students joining the wind section of the full orchestra.

School counselors were named by 305 participants (68%) as the primary person assisting them with their schedule. Participants also listed counselors as being an obstacle to scheduling music ensemble classes. Respondents' comments included the following:

"Counselor made me choose between choir and band."

"Our counselors scheduled AP classes at the same time as band so band students couldn't take AP classes. We had to talk to them to change it."

"Pressure by counselors to take more AP classes."

"Advised to only take one band class…I took two."

"Counselor signed me up for the wrong classes."

The 55 participants that reported taking classes outside the regular school day in order to take multiple music ensemble classes took an average total of 7.9 music classes during grades 9 through 12, or approximately 2 music classes per year. The courses that were most frequently taken in either summer school or by correspondence were social studies classes (economics, history, geography, and economics) ($n = 45$), health ($n = 11$), speech ($n = 10$), and physical education ($n = 9$). It is important to note that participants also took outside courses in mathematics ($n = 7$) and in science ($n = 6$), which are the subjects requiring an additional credit under the 4 by 4 plan.

This study indicates high school music ensemble directors face a number of challenges in retaining students. Because scheduling conflicts seem to be a major issue, perhaps directors can work with the school counselors and principals to develop a master schedule that minimizes conflicts with AP classes and other major music ensemble classes. Additionally, because the school counselor is typically the person responsible for planning a student's schedule, it might be beneficial for ensemble directors to present counselors, students, and parents with a model 4-year high school plan whereby students can participate in multiple years of music, if they should so choose. For students indicating an interest in taking multiple credits of music ensemble, perhaps the director could provide information regarding the options available through summer school and correspondence courses.

In order to diminish the high attrition rate from 8th to 9th grade, perhaps it would be beneficial for directors to obtain a list of 8th-grade students who plan to be in their high school music ensemble. They could communicate with the students regarding how they will be able to include a music ensemble class in their schedule in 9th grade. Further, they could follow up on the students whose names do not appear on their class rolls at the beginning of the following school year.

Participants indicated that one of the primary reasons for taking music ensemble classes in high school was their love for music and for performing. They also indicated that the social aspect of being in a music ensemble is important to them in that they have fun and make many friends. Perhaps knowing the primary motivation behind student membership in music ensembles can assist directors in knowing what to emphasize during recruitment. Although a love for music and performance appears to be more intrinsic in nature, directors could capitalize on the social aspect of ensemble membership by having current students talk to potential members about the fun they have and the friends that they have made.

It is important to note that some middle schools have begun to respond to the pressure placed on the high school curriculum by offering Algebra I, BCIS, Speech, Health, foreign languages,

and other high school level courses. However, this in turn, could have a negative impact on enrollment in middle school music ensembles. Over the next few years, it might be helpful to monitor music ensemble enrollments in Texas secondary schools to assess the impact of the 4 X 4 plan. Additionally, music ensemble directors may have to be more flexible and creative in scheduling their classes in order to provide students with the option to take music ensemble classes outside of the traditional class day.

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Edited by
Mary Ellen Cavitt, Texas State University — San Marcos

American Music Teacher Preparation through the Lens of a Russian and a Korean Pre-Service Teacher

Vicki D. Baker
The University of Texas at Arlington

For the past eight years, colleges and universities in the United States have hosted more than half a million foreign students. According to *Open Doors 2007*, 582,984 international students were enrolled in higher education in the United States in 2006-2007, representing a 3% rise in enrollment, the first significant increase since 2001-2002 (*International student enrollment,* 2007). The report indicates international student enrollment in fall 2006 represented a 10% increase from the previous year. A survey conducted by Institute of International Education (IIE) in fall 2007 points to a trend in rising international student enrollment. Further, *Open Doors 2007* reports that 3% of international students enrolled in 2006-2007 selected education as their major field of study.

The influx of international students into music teacher preparation programs throughout the United States raises a number of questions regarding the traditional approach to teacher training. In addition to meeting academic demands, this diverse population must learn to communicate in English, adapt to a different culture, and familiarize themselves with the American educational system. International students may also experience a sense of isolation because they are excluded from the social circle of their peers. A number of studies have been conducted addressing these academic and social stressors of international students.

Academic Issues

In a study conducted by Zhai (2002), 50% of international students indicated that adjustment to the U.S. education system was one of the most difficult challenges that they encountered. The factors that students reported as being most challenging included fast-paced classes, required student participation, different teaching methods, interaction with professors in class, more writing and reading assignments, more classroom and group activities, more speech and oral presentation requirements, and more studying outside of class. Most international students are accustomed to more formal and structured educational systems in which they are trained to listen passively to instructors and then produce the lecture material verbatim on exams (Abel, 2002; Ladd & Ruby, 1999: Selvaduria, 1998; Spencer, 2003). Thus, they must adjust to a freer learning environment in which they must learn to solve problems and locate information

independently, rather than memorizing facts (Adrian-Taylor, Noels, & Tischler, 2007; Ladd & Ruby, 1999; Robinson, 1992). Requirements of class discussion also pose a challenge in that many international students have been taught to remain silent in class unless they have something important to contribute and when asked a question, to think through the questions before responding, which is different from the American five-second response time (Lee, 1997). Additionally, they are often asked to discuss issues that are foreign to their experience and are unable to participate due to lack of background knowledge (Chen, 1996).

Many international students have a higher respect for authority than their American peers and thus may have difficulty negotiating the relationship with their professors (Selvadurai, 1998). Social roles and boundaries are often unclear in that American teacher-student relationships are more open and free than in their native countries (Robinson, 1992).   In many Asian countries, teachers are respected authority figures and thus are addressed with an honorific title, such as "Teacher." Asian students feel uncomfortable in classes where students call professors by their first name or when students question the professor, because that is considered impolite in their culture (Lee, 1997). In addition, international students sometimes feel that American teachers are uninterested in assisting them because the students are uncomfortable with the idea of approaching teachers directly and are unfamiliar with the convention of office hours (Robinson, 1992). Typically, international students are hesitant to ask for assistance due to high self-expectations and a lack of confidence (Chen, 1996).   Further, international students cite a lack of time and a lack of openness on the part of the teacher as major sources of conflict (Adrian-Taylor et al., 2007).

English Language Proficiency

In order to study abroad, most international students are required to use a secondary language as their primary learning language. It is difficult for international students to have the same fluency as their native classmates, thus leading to what Chen (1999) terms "second language anxiety." Studies indicate that English language proficiency and communicating with others in academic settings is a great challenge for international students (Abel, 2002; Adrian-Taylor et al, 2007; Chen, 1999; Chen, 1996; Ladd & Ruby, 1999; Lee, 1997; Robinson, 1992; Zhai, 2002). Lack of confidence in oral skills can be a handicap to participation in class discussions and can negatively affect an international student's self-assurance and self-esteem (Chen, 1999; Chen, 1996; Lee, 1997). Lacina (2002) adds that an international student's accent and unfamiliarity with college slang and idioms can impede his or her ability to communicate. Lee (1997) describes the inability to understand fellow classmates and professors as being "debilitating." She posits that two of the primary reasons international students have listening problems are (1) they frequently learn British English from non-native speakers and (2) they do not understand Americans' use of reduced forms (*wonna* for *want to*) and idiomatic language (*get out of here*). This struggle with oral communication also negatively impacts social relationships. International students report having difficulty making American friends due to language barriers (Chen, 1996).

Although an international student's English proficiency may be adequate enough to pass university language requirements, such as the Test of English as a Foreign Language (TOEFL), it may not be sufficient to perform academic tasks (e.g. writing papers, taking notes) (Robinson, 1992; Selvadurai, 1998; Spencer, 2003). International students describe writing papers as "an exhausting and time-consuming task," primarily due to the grammar and structure of English (Chen, 1996, p. 11).

Sociocultural Factors

In addition to the challenges associated with academic issues and language proficiency, international students must make adjustments to a new cultural environment. When international students are transplanted into a culture with values that are incompatible with those of their native culture, they may experience culture shock. Selvadurai (1998) explains that most international students are from cultures with close family relationships and well-defined patterns of etiquette, dietary habits, and religious beliefs. He posits that being placed in a liberal, free culture with an emphasis on independence can be traumatic. Lacina (2002) agrees that the transition to a new culture may result in culture shock and lead to extreme loneliness and physical symptoms related to stress.

Difficulty with the acculturation process, such as lifestyle and value conflicts, may lead to social isolation (Chen, 1999). In a study conducted by Trice (2004), international students who resembled and were culturally similar to Americans (Western Europeans) and who communicated well in English had the least problems with socialization. She went on to explain that although African and Middle Eastern students had the least interaction with Americans, few were bothered by this. However, students from East and Southeast Asia expressed greater concern about establishing American friendships and functioning in the American culture.

Cultural differences may play an important role in the international students' ability to develop social relationships. Lacina (2002) explains that the concept of friendship varies from culture to culture and in America, friendship may be more impermanent than in other cultures. Interaction with American students may lead the international student to believe he or she is developing a close friendship, while the American student is merely engaging in superficial socializing. In the same way, friendly conversations with Americans are frequently misinterpreted by international students as romantic overtures. Selvaduria (1998) suggests that both international and native students create roadblocks to socialization through impatience, prejudice, and political and religious beliefs.

Gender roles may be an additional cultural stressor because in many countries, the role of women in society is similar to that of American women in the early 1900s. Lacina (2002) points out that male international students who are from countries that openly discriminate against women may have difficulty accepting women as equals. In particular, it may be challenging for men who have attended all-male schools in their native country to respect US female professors as authority figures.

Purpose of the Study

Although research has been conducted on the various academic and social challenges facing international students, there is a paucity of research regarding the unique issues involved in preparing foreign students to become American music educators. As a professor responsible for music teacher training courses, this researcher noticed that international students struggled with both written and oral assignments. Although the students gave every indication of being accomplished musicians and knowledgeable in their subject matter, performance in their music education courses was poor. Thus, the purpose of this study was to gain insight into the educational experience of international students and examine what aspects of the university music teacher preparation program were most challenging. Further, this study sought to provide

educators with tools to be better able to identify and address the needs of international pre-service teachers.

Method

Data for this qualitative study were collected via informal class observations, as well as individual interviews with two international students at The University of Texas at Arlington. Interview questions were researcher-designed. The questions were arranged in the following five categories:

Academic Issues

1. Describe the music education you received in your native country.
2. How do music programs in Texas schools compare to those in your native country?
3. What were the roles of music and music education in your native country?
4. What are some of the greatest academic challenges you have faced as an American university student?
5. What are some of the greatest academic challenges you have faced as a student enrolled in music education courses?

English Language Proficiency

1. How difficult has it been for you to overcome the language barrier in terms of verbal and written communication?

Sociocultural Factors

1. What are some of the differences between your culture/society and American culture/society?
2. What is the role of women in your society compared to the US?
3. What is the status of a music teacher in your native country?
4. On a social level, how well do you relate to your fellow music education students? Do you feel accepted or isolated by your fellow students?

Suggestions

1. Do you have any suggestions regarding how music education professors can communicate course content more effectively?

Contributions

1. As a native of another country, what do you feel that you can uniquely offer to your American students?

The participants were seeking Texas teacher certification in all-level music, with an emphasis in choral music education. Both students were female, married, and had children. The

participants represented different countries; Nahmee from Korea and Francheska from Russia. Students were interviewed in my office during the spring 2007 at The University of Texas at Arlington. Each interview lasted about 45 minutes and students were asked the same questions. The interviews were transcribed and an analysis of the content was conducted.

Results

Data obtained from the interviews were analyzed and reported categorically. Responses from each student were clearly delineated to assist in comparison of the two cultures.

Academic Issues

1. Describe the music education you received in your native country.

Francheska attended school in Russia, Ukraine, and Uzbekistan. She explained that it was very competitive to be accepted into a public music school in Russia. At the age of six, she had to take an entrance exam that included some music theory elements, ear training, and piano performance. She did well on the exam because she had begun private piano lessons a year prior to the exam. She began public music school at seven years of age.

Francheska's music classroom had a huge poster of the Circle of Fifths hanging above the piano. She said the poster "was a music Bible for us children." Additional theory posters were on the walls, as well as portraits of composers who wrote music for children. Beginning in grade 5 through grade 10, students had their music classes in the concert hall. She explained that portraits of composers from various style periods decorated the corridors of the music school. In addition, the halls and classrooms had pictures of choir members, as well as colorful posters with music theory terminology and solfège.

In Russia, the music curriculum for students in public schools included choir, music literature, and theory. In the music public schools, the curriculum included piano class, solfège, music theory, music literature, choir, choral conducting, and ensembles. The primary teaching methodology used in the elementary public schools was the Kabalevsky method (similar to Kodály). In the secondary public schools, choirs and bands were the basis of the music curriculum.

Nahmee attended school in Seoul, South Korea and began public school at the age of seven. She remained in the same classroom all day and did not have a special room designated for music. Nahmee remembers the president's picture on the classroom wall, along with pictures of national heroes, but there were no musical pictures or posters.

The classroom teacher was responsible for teaching music. Students learned to read solfège, but the teacher moved very quickly, and as a result very few students participated because they were unable to process the solfège quickly. They did not use hand signs and did not have a rhythmic counting system. The teacher taught songs by rote and accompanied the class on a pump organ or piano.

Although the Korean elementary schools were coeducational, in middle school and high school students attended same-gender schools. Nahmee did not receive any musical training in middle school, but in high school, she had a music class once a week in which the students just sang. She recalled that her friend had a violin and she had never seen one before and had no idea what it was. Nahmee stated, "I was embarrassed because I was in high school and had never

seen a real violin." She added that she had no time to watch television because she studied at school all day and at home all night, so she had no exposure to stringed instruments.

Her high school also had a choir, but it was an auditioned group. Nahmee said that only the very best singers were in the choir and they practiced daily. The choir did not have concerts because there was no auditorium, but they did perform at special ceremonies. She recalled that on occasion the entire student body would gather in a big field and the principal would give them a speech regarding the importance of discipline, study, and making good grades in order to be accepted in college.

The band at Nahmee's high school led in military marches. All of the students were required to wear uniforms and were trained to be soldier nurses. (Nahmee attended school post-Korean War). She said that they were required to march like soldiers, with very straight lines, and the band always led the marches.

2. How do music programs in Texas schools compare to those in your native country?

Francheska stated that music programs in Texas public schools promote a great feeling of pride. In addition, she said, "I classify the choral art as a very professional and high level of art in the Texas public schools."

Nahmee explained that in Texas they address all different learning styles so that all children can learn and enjoy music. She stated that in Texas schools, they have the philosophy that all children have musical aptitude and they simply seek to find what their area of strength is and focus on that. She went on to say that in Texas all students have the opportunity to learn about music. She said, "And when I came here [Texas] I was so glad because my daughter was in violin in school and she can compete and have motivation. If I had been born here I would be something by now because I have so much patience and desire for piano."

3. What were the roles of music and music education in your native country?

Francheska stated that she thought that music education became a required part of the public school curriculum in the mid-1930s and the public music school system began around 1950. She explained that music education was a required part of the educational process in her family and they considered music classes equally important as physics, algebra, and languages. She went on to say, "People love singing in Russia. They sing at home, in the parks and at work. Song is an important part of life for Russian people, as well as instrumental music."

In Korea, however, Nahmee explained that little time was devoted to music and art because the emphasis was on academics. She stated, "The emphasis was to study and pass the test and do well on the test." She said that Koreans were very education-oriented, particularly in the unstable post-war society. Nahmee said that people did not have the money to provide their students with private musical training. She remembered begging her mother to take piano lessons, and her mother's response was, "Unless you are gifted, we cannot afford it." Nahmee recalled:

> I didn't think I was gifted but I really loved it. When I listen to music I just cry. I would pass by someone's house and someone play the piano and then I just stood there against the wall and listened and then cry. I loved it that much but I never thought I was gifted.

Nahmee went on to say that as people became more economically prosperous, they began to enroll their students in piano lessons. She explained that there were numerous music institutes where students could walk after school for lessons.

4. What are some of the greatest academic challenges you face as an American university student?

Francheska indicated that her greatest challenge has been the large number of opportunities and choices. She stated, "Student's life is busy and interesting in any country. I generally like educational process. I like to be a student at UTA."

Nahmee said she did not feel challenged academically, except regard to language.

5. What are some of the greatest academic challenges you face as a student enrolled in music education courses?

Francheska felt that her greatest challenge has been to master the variety of teaching methodologies, such as Kodály, Orff, Dalcroze, etc. Nahmee said her greatest challenge was when the professor speaks too quickly and she has difficulty processing the language and thus misses out on the content.

English Language Proficiency

1. How difficult has it been for you to overcome the language barrier in terms of verbal and written communication?

Francheska replied:

I take a role of a listener in the conversation, this is my nature. I enjoy listening to native English speakers. This is very melodic and rich language. Europeans say that French is a language of love. English is a language of music to me.

She went on to say that her confidence with her verbal communication skills depends on the vocabulary and personality of the person with whom she is communicating and the number of times she has met with the person. In terms of written communication she felt that the style of the 21st century writing is different from that of the 20th century in that messages are much shorter. She explained that she usually checks the grammar at least three times before sending a written communiqué.

Nahmee feels that verbal communication is critical to her success as a teacher. She stated, "If I can communicate well, I can teach well…Even though I have an accent or I can't speak eloquently I can still communicate with children." She said that she feels confident teaching students through 6th grade, if they are respectful. She explained, "If they start to argue then I don't know how to discipline with eloquent speech." Her primary concern is communicating with older adolescents and adults, specifically teachers and principals. In terms of written communication, she usually has an English tutor. She explained, "I am always nervous. I will write, throw it away, and write it another way."

Sociocultural Factors

1. What are some of the differences between your culture/society and American culture/society?

Francheska responded as follows:

> American people have a great ability of patience toward different cultures and each other. They are open and very sensitive. They are not prejudiced, respect moral principles, and values of others. The number of choices and opportunities for self-expression amazes me in this country.

Nahmee said that in Korea the teacher had complete authority and had more power than the parents. A typical teacher would have 60 children in a class with no assistant, but she did not have any discipline problems because the parents supported the teacher. She explained that the worst thing a student could do was to get a bad grade, because that indicated that he or she was not studying and did not have respect. The teacher did not have to repeat instructions, and the students always had all of their materials and were prepared for class. Students who broke the rules were either hit on the hand with a ruler or were spanked with a stick. The worst act of rebellion Nahmee recalled was when girls in high school cut their bangs, which was forbidden, in that all girls were required to wear braids and to keep their hair out of their face so it would not interfere with their studying. Out of the thousands of students in her high school, Nahmee could only remember three or four students getting in trouble.

In terms of values, Nahmee stated that American parents often do not set the appropriate moral example and thus their children do not respect or obey them. She said that the lack of respect makes it more difficult to manage discipline in the American classroom. She went on to say the emphasis in American education is on gaining knowledge, whereas in Korea teaching morality and building character are important elements of the educational process.

Additionally, Nahmee said that Americans were not trustworthy. She explained that she did not feel that she could trust anybody because they might say, "I love you" or "you are my best friend" and then the next day they turn their back on her. She feels that such declarations are meaningless to Americans.

2. What is the role of women in your society compared to the U.S.?

Francheska said that Russian women had the same goals as any other family-oriented society. Typically, education is followed by marriage, and then come children and work.

Nahmee explained that traditionally Korean women stayed home and raised their children. Her mother was a teacher, but she quit her job when her first child was born. Nahmee said her dream was to get a piano degree, get married, have a lot of children and teach piano at home. She explained that when she was growing up in Korea, there were very few jobs available to married women, so she felt her only option was to stay at home and teach piano.

3. What is the status of a music teacher in your native country?

In Russia, Francheska stated that it was a great honor to be a music teacher. She said it was a respected position that included a lot of responsibility and hard work. Likewise, Nahmee said that music teachers, like all teachers in Korea, were treated with great respect.

4. On a social level, how well do you relate to your fellow music education students? Do you feel accepted or isolated by your fellow students?

Francheska responded as follows: "I am always glad to come to the class and meet my fellows, as well as my professors. I think about them as a part of my life and we have common goal to be the music educators." She stated that she never felt isolated or like an outcast at UTA and that she had many friends in the music department.

On the other hand, Nahmee stated that she had a very difficult time relating to her fellow music education students. She said, "They are going to be an educator and they don't have respect. They do not really include. They are not [acceptive]. They clique with their own friends and any outsider they treat as an outsider." She went on to say:

> Music class; that is the fun class. I mean, where I feel that I belong. I feel I belong there and we are always learning from each other and discussion even though I was worse in speech but I always felt I belonged there. Maybe it is just because there are more close girls in the class.

She felt that each time she tried to get close to someone, another student would try to block that relationship. Nahmee stated:

> I finally got in conversation with somebody and they just kind of give them a signal and make them all feel uncomfortable and one time there is a really strong tension in the class. I couldn't focus on the study.

She found that was hurtful because she felt they were questioning her character. She said:

> You are going to teach my grandchildren and my grandchildren look like me and you have a prejudice against a culture and you are prejudiced about my speech and that's another thing. I have been through all different colleges and all different settings and that never occurred in the class.

She did mention that towards the end of the semester the other students became nicer and talked with her more.

Instructional Suggestions

1. Do you have any suggestions regarding how music education professors can communicate course content more effectively?

Francheska stated that she needs a goal, a clear plan, and the appropriate resources to attain that goal. Nahmee suggested that professors reassure students that they are welcome to come and ask questions about assignments. She said, "I always hesitate to come and ask. I feel bad to ask outside of the classroom and that is why I spend so much more time trying to figure out simple things." She explained that the reason she hesitates is that she fears that, as a college student, the professor expects her to already know certain information, plus it is a matter of her self-dignity. Nahmee also stated that she did not feel that it was fair to the other students for her

to get extra time and attention from the professor. Another challenge Nahmee mentioned was language. She said that sometimes professors speak so fast that she has difficulty processing the meaning of the words and therefore misses the content of the lecture.

Unique Contributions

1. As a native of another country, what do you feel that you can uniquely offer to your American students?

Francheska stated that she has worked with students and parents from a variety of ethnic and cultural backgrounds for many years and is familiar with their lifestyles and demands. In addition, she has experienced different types of educational situations and brings a broad perspective to the music classroom.

Nahmee said that the strong moral and character training that she received in Korea is something that she wants to institute in her classroom. She recalled that her favorite Korean teacher began each day with a moral lesson, and would ask, "What kind of person do you want to be?" She explained that it was not just about a job or making money, but what kind of character did you want to build. She said, "When I become a teacher I still want to carry on even though time is different. I still want to bring up their morals in nice literature and relate it to their behavior both in and out of the class." She stated that she wanted to be a strong role model and to be a person that her students remembered not just for teaching them music, but for teaching them morals.

Discussion

Educational Background

Francheska began her musical training by taking private piano lessons at the age of five. She was enrolled in a music public school in which she received extensive musical training throughout her elementary and secondary years. In addition, her family was extremely supportive of her musical training. On the other hand, Namhee received very limited musical training in her elementary and secondary schools. Her music education began after she graduated from high school and began attending a music conservatory. Both students had a music educational background that is dissimilar to that in American public schools. In addition, both students were raised in a society in which teachers were highly respected and honored. Therefore, preparing to become a music educator in the US requires that they become familiar with an educational system that is quite foreign to their experience.

English Language Proficiency

Both Francheska and Nahmee expressed concern regarding written communication. They explained that they would review their writing several times before completing a communiqué or assignment. When the students were asked to participate in the interview, they each requested the interview questions in advance, to have some time to read over the questions and process the material. Francheska wrote her responses in Russian and then translated them to English for the interview.

In terms of oral proficiency, Nahmee mentioned her concern about having an adequate vocabulary to be able to communicate with older students, as well as teachers and principals. Francheska also indicated that her confidence with the spoken language was contingent on her audience but did not state that it was a real problem for her. This supports research that indicates that professors tend to view poor English proficiency as a greater problem than do international students (Adrian-Taylor et al., 2007). In a classroom setting, the researcher observed that both students tended to be very quiet in class and only joined in discussions when called upon to do so. This supports research that indicates that most international students are more accustomed to listening than speaking in class (Abel, 2002). However, whenever a musical question was asked, they would be quick to respond and did so with confidence.

Part of the course requirement for music education classes is peer teaching. This is the setting in which the researcher observed that Francheska and Nahmee were most uncomfortable and visibly struggled. While teaching ones peers is naturally stressful, they seemed to be more nervous than their American counterparts. Both students wrote excellent lesson plans, but they struggled in executing the lesson due to language difficulty. Francheska knew the appropriate words, but her accent was so strong that it was difficult, and, at times, impossible to understand what she was saying. This language barrier impeded her ability to teach a lesson effectively. Nahmee's pronunciation was easier understood, but she would hesitate at times as she sought the appropriate word. Their pacing was much too quick and they limited their interaction with the other students in terms of checking for understanding. They seemed to want to complete the lesson as quickly as possible with a minimum of interaction with the class.

An additional impediment to their teaching was their inability to model English diction for their students. When the researcher modeled the various vowel sounds for the international students, they were unable to reproduce them correctly. Modeling is a critical aspect of music training, particularly in elementary and choral music classes.

Sociocultural Factors

It is interesting to note that Francheska and Nahmee had very different views of the American culture. Francheska described Americans as being "open" and "sensitive" to different cultures and unprejudiced. She also stated that Americans respect moral principles and the values of others. On the other hand, Nahmee expressed the feeling that Americans did not have moral values or character and as a result the children were undisciplined and disrespectful. She also described Americans as "untrustworthy" and "prejudiced." This is in keeping with research that indicates that East and Southeast Asians have difficulty understanding American cultural norms (Chen, 1999; Trice, 2004)

The two students had different experiences in their relationship to their fellow music education students. Francheska described the other students as being a part of her life and indicated that she had many friends in the music department and, as a result, never felt like an outcast. On the other hand, Nahmee felt that there was a sort of conspiracy among the music education students to isolate her and to keep her from becoming a part of the group. This is in keeping with research that indicates that international students often experience a sense of social isolation and alienation (Chen, 1999). Nahmee viewed her fellow students as being a clique and being racially prejudiced.

Suggestions

Francheska stated that she needed a goal, a clear plan, and the appropriate resources to attain that goal. The researcher noted that each time Francheska was provided a model of the finished product, she was more successful. Nahmee said that she needed to feel greater reassurance about going to the professor's office and asking questions about assignments. This supports research that indicates that international students view lack of accessibility on the part of professors as a major source of conflict (Adrian-Taylor et al., 2007).

Another way Nahmee mentioned that professors could help her be more successful was by speaking more slowly. Her inability to understand course content was often due to the fact that the professor was talking too quickly, which is a common lament among international students (Spencer, 2003).

Contributions

Having a varied music education background, Francheska felt that she had the experience and flexibility to work with all types of students. Nahmee's strict moral and character training in Korea was something that she felt was lacking in American education and she desired to incorporate that in her teaching.

Recommendations

Listening Ability

The inability to understand the professor and fellow classmates can cause an international student to fail both academically and socially. In an investigation conducted by Lee (1997), international students stated that their listening difficulties could be alleviated by the following:

1. *Professors should speak slowly and clearly.* Foreign students felt that American students would also benefit from slower speech in that it would give them additional time to process information and take notes.

2. *Repeat key terms and write them on the board.* To help students follow the lecture it is beneficial for instructors to write terms on the board, repeat key terms, and provide students with a handout and/or outline to follow.

3. *Write homework assignments on the board or use a handout.* Students may have difficulty understanding oral assignments, due dates, or changes to assignments. Even when an instructor asks if everyone understands the assignment, students may be hesitant to speak up due to embarrassment or may not even be aware that an assignment is being discussed.

4. *Provide copies of notes or make clear which sections of the book are being covered each day (or both).* Often students (both international and American) who do not understand what has been discussed in class will review the textbook to assist their comprehension of the lecture material. Because textbooks are not always approached sequentially and supplemental materials are often used, access to notes aids in student comprehension.

Oral Production and Communication Skills

Spencer (2003) has found that conducting a diagnostic upon the particular areas of English that are the most challenging for an international student to pronounce and practicing certain mechanical exercises may assist in reducing accent. She recommends the use of Dauer (1993) and *Pronunciation Power* (1996) to assist in identifying problem areas and providing practice exercises. Spencer goes on to state that in order for international students to successfully change their native speech patterns, they must learn to self-monitor and self-correct. The use of audio- and video-taping can be useful tools for feedback.

Spencer further suggests that students have English-speaking partners with which to communicate in order to develop true conversational fluency. She explains that this can be accomplished by assigning students to work in pairs or small groups. Lacina (2002) explains that universities with large international populations sometimes have conversational group meetings to provide students with practice in having academic conversations, learning how to have social conversations with American students, and preparing for the SPEAK (Speaking Proficiency English Assessment Kit) test.   These group meetings, sponsored by the international student center, typically consist of three to four international students paired with an American student.

International students made the following suggestions to encourage them to be more active participants in class discussions (Lee, 1997):

1. *Provide review questions.* Students requested that a list of possible discussion questions be provided in advance so they could prepare their responses. Due to the unpredictable nature of class discussion, this suggestion was not practical. It is interesting to note that the students who were interviewed for this project requested the interview questions in advance to help them prepare their answers.

2. *Provide an atmosphere conducive to questions.* Although it may be difficult to understand what the international students are saying, their participation can be encouraged by doing the following:

   Listen carefully and make an educated guess. Lee suggests that the more you listen to international students, the easier it is to understand them. She also states that you comprehend more than you realize.

   Ask the student to spell a word or rephrase a statement. International students report that they do not like to do so and after two attempts they generally quit.

   Have the students write on the board. When international students had difficulty being understood while teaching in music education classes, the researcher suggested that they write the word(s) on the board to facilitate the students' understanding. In addition, prior to teaching the researcher had them write key vocabulary words on the board, so they could point to them as they spoke them during the lesson. This proved to be quite effective.

3. *Give students time to reflect.* When asked a question, many Americans think aloud and provide an immediate response. In other cultures, it is not uncommon for a student to pause 15 to 20 seconds before responding. Rather than taking over the conversation after the accustomed 5-second response time, it would be helpful for American professors to give foreign students time to formulate an answer before speaking.

Vocabulary

Use of idioms or slang may cause international students to misinterpret the meaning of a word or a phrase, so it is important for university faculty to choose their words carefully when communicating with foreign students. For example, the literal meaning of the phrase *get out of here* is "leave"; figuratively it means "you are joking." International students suggest that if a professor uses slang, idioms, proverbs, or a long series of nouns or adjectives, it would be helpful to have the idea repeated in terms the student can understand (Lee, 1997). They also point out that the use of words such as *can* and *can't* sound highly similar, but can completely change the meaning of a sentence.

Therefore, perhaps it would be helpful if foreign students familiarize themselves with the informal language used in the U.S. Lacina (2002) recommends Dave's ESL Café [http://www.eslcafe.com/] as a resource for international students to learn American idioms and slang and for university faculty to familiarize themselves with ESL (English as a Second Language) issues.

Academic Issues

Because many international students are accustomed to educational systems in which the lecture method is used with little or no interaction, Ladd and Ruby (1999) suggest that the concept of class participation be introduced slowly, by first asking for simple recall of facts, proceeding to short answers, and gradually introducing open-ended questions that require problem solving, opinions, and decision-making. They caution that the instructor should respond positively even when a response is incorrect. They feel this will help students build their self-confidence in speaking in class.

At the beginning of the semester, Ladd and Ruby (1999) feel that it is beneficial for the instructor to meet with the international students after class to discuss class rules, expectations, and teaching methodologies, as well as provide the students an opportunity to ask questions and express concerns. They feel that opening dialogue early on will allow students to feel more comfortable about approaching their instructors and will help them better understand their classes. Lee (1997) points out that many international students will go to a professor's office as a last resort because they are unsure of the welcome they will receive and are fearful that questioning a professor could be construed as an insult to the professor's ability to explain the subject matter. She suggests that the professor take extra time to explain the assignment and encourage the student to come back if he has additional questions.

Because foreign students may be accustomed to a very different educational system, Ladd and Ruby (1999) posit that the professor should discuss common U.S. education practices regarding cheating, plagiarism, attendance, tardiness, and self-directed learning. Writing poses one of the greatest challenges to international students not only due the difficulties with the English language, but also because writing styles vary tremendously from country to country

(Lee, 1997). Therefore, Lee suggests that students be provided with samples of both good and bad papers to assist them in understanding the assignment and analyzing the criteria for a satisfactory paper. In addition, she posits that expectations should be explained in simple but detailed terms.

Undergoing the rigorous demands of a university music teacher preparation program in the U.S. can be potentially daunting to native born students. However, international students who choose to become American music educators are subject to even greater challenges in that they not only have to address the demands of the curriculum but must also gain an understanding of the U.S. educational system, the English language, and American culture. As the population of international students continues to grow, it would be helpful for music education professors to gain an awareness of the special needs of this diverse population in order to assist them in successfully achieving their career goals as music teachers.

The findings of this study are limited due to the use of only two female subjects representative of two countries. Further research is needed with a greater number of participants of both genders representative of more countries. In addition, research might focus on the implementation of some of the recommendations listed in this study.

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Edited by
Mary Ellen Cavitt, Texas State University—San Marcos

An Exploratory Study of Secondary-School Pupils' Perspectives Regarding the Student Teachers in their Classrooms

Virginia Wayman Davis
University of Texas—Pan American

For those of us who teach in higher education, periodic student evaluations of our performances in the classroom are nothing new. College-level students evaluate their professors on a number of factors, including professionalism, enthusiasm, knowledge of subject, and fairness of exams and grading procedures. These student assessments are an important part of annual evaluations for college professors, used to make performance-related decisions such as those of tenure and promotion (Olivares, 2003).

In K-12 schools, however, periodic performance evaluations of teachers are most commonly administered by principals. Once- or twice-yearly classroom observations, often followed by a conference with the teacher, serve as a tool to help educators improve certain aspects of their teaching, such as delivery, classroom management, and adherence to state educational standards. Evaluations of teachers by their pupils are rarely conducted at the primary or secondary school level.

In the case of student teachers, assessment of teaching skill is normally the job of a number of individuals: the student teacher's cooperating mentor teacher, the university supervisor, and occasionally a building principal, fine arts supervisor, or other administrator. As with their more experienced counterparts, student teachers are rarely evaluated by their pupils, though pupils have the opportunity to see student teachers numerous times, in a variety of situations, unlike university supervisors.

Why aren't K-12 pupils more involved in the evaluation of their teachers? If college professors can gain valuable information from their students, why is this same information not seen equally valuable for K-12 teachers? Perhaps elementary school students lack the maturity or verbal sophistication to make evaluative judgments regarding their teachers, but middle- and high-school students certainly have a great deal of experience with teachers. By high school, many students have been taught by as many as 15 different teachers, and (assuming a 180-day school year and at least 6 hours per day of instruction), have spent over 10,000 hours in classrooms. Indeed, several researchers suggest that secondary-school pupils are able to evaluate their teachers with a reasonable degree of accuracy, as compared with evaluations completed by trained observers (Perl, 1978; Veldman, 1970).

A series of studies in the 1960s and 1970s sought to discover whether pupils should be included in the student teacher evaluation process. Though somewhat dated, these early studies do give valuable information about pupils' abilities to rate their teachers, particularly since no recent studies on the topic have been widely published. The earliest and seemingly most influential of these were a series of studies conducted by researchers Donald Veldman and Robert Peck.

In 1969, Veldman & Peck published a study exploring what influences existed in pupil evaluations of student teachers. Factors most influential were found to be grade in student teaching, grade level of the class (particularly in seventh grade and between junior- and senior-high students) and subject matter area. Certain subject areas (like physical education) appeared to lend themselves more to positive teacher ratings than did others, leading to speculation that the ratings may be more influenced by the characteristics of the class rather than those of the teacher.

Veldman (1970) then completed a study in which students in 55 seventh grade classrooms were asked to compare their regular (mentor) teachers with the student teachers assigned to their classes. Veldman found striking differences in the way that the experienced teachers and the student teachers were perceived. Pupils rated the experienced teachers as less friendly and cheerful, less lively and interesting, and less directive than the student teachers, but found them to be more poised and knowledgeable and more firmly controlling.

Later that decade, Meighan (1974) surveyed 160 students ages 10 to 16 years old regarding their perceptions of their student teachers. Pupils were asked to list "things you do well" and "possible improvements." The judgments of the pupils were compared with those of the student teachers themselves, the mentor teacher, and the university supervisor. Meighan found that the pupils provided consistent responses for many items, though there were some areas where the pupils disagreed with the other three judges. Areas in which the pupils agreed among themselves and with the other three judges were: 1) preparation and interest of lessons, 2) some aspects of presentation such as use of voice, 3) attitudes of student teachers to pupils such as fairness, and 4) general organization of lessons. The author concluded that children's perceptions of the performances of student teachers may be reliable and valid and warrant further attention.

What makes an effective teacher from the students' point of view? Whitney and colleagues (Whitney, Leonard, M., Leonard, W., Camelio, M., and Camelio, V., 2005-2006) used a qualitative inquiry process to ask 271 high school students to describe qualities of their teachers. After coding the students' responses, the researchers discovered three major themes: personal connections, balance, and universality. The students described desirable relationships with teachers based on mutual trust and respect, healthy moderation in areas such as discipline and workload, and a strong sense that teachers must serve all students equally and fairly when presenting lessons and interacting with students.

Wubbels & Breckelmans (2005), in an analysis of several studies regarding student evaluations of their teachers, have isolated some characteristics of effective teachers as perceived by students, which supported data regarding student achievement and attitudes. The researchers concluded that dominant leadership and helpful/friendly behavior was positively correlated with high student achievement. Additionally, leadership, helpful/friendly behavior, understanding, and student responsibility/freedom were positively related to student attitudes about their teachers and about learning.

In music education, characteristics of effective teachers have also been investigated. Hamann, Baker, McAllister, and Bauer (2000) explored the effect lesson content and delivery skills had on university students' perceptions of effectiveness. Music students watched four videotaped lessons: one with what was judged to be good classroom delivery and good content,

one with poor delivery and good content, one with good delivery and poor content, and one with poor delivery and poor content. Results indicated that students preferred lessons with good delivery over those with poor delivery, even if the actual lesson content was poor.

Other areas that researchers have found to contribute to effectiveness are teacher intensity and teacher magnitude. Teacher intensity refers to "the sustained control of the student-teacher interaction evidenced by efficient, accurate presentation… with enthusiastic affect and effective pacing," (Madsen & Geringer, 1989, p. 90). Similarly, teacher magnitude (how a conductor makes a rehearsal more exciting) was found to significantly affect attitude, attention, and the performance of music students (Yarbrough, 1975). Effectiveness ratings may also be influenced by teaching behaviors perceived by observers to be "off-task" or unfavorable (Hancock, 2003; Madsen, 2003).

Level of expertise can also affect observer perceptions of teacher effectiveness. When pre-service (university music education majors) and experienced music teachers were asked to rate the effectiveness of videotaped teachers, it was found that the less experienced teachers gave higher, less critical ratings than did the experienced teachers (Madsen & Cassidy, 2005). Similarly, when music students of various levels — 6th through 8th graders, 9th through 12th graders, university undergraduates, and experienced teachers — were asked to evaluate videotaped teaching segments, the secondary school students assigned higher ratings to teachers with good delivery and attentive students, whereas the experienced teachers appeared to base their evaluations on the accuracy of the information delivered (Madsen, 2003). The middle school students (6th through 8th graders) focused particularly on the classroom management skills of the teachers. It was noted, however, that all four groups tended to evaluate heavily on the basis of delivery.

Teacher effectiveness continues to be a valuable area of interest for the profession. Although judges of teacher effectiveness have come from various levels — university music majors and non-majors, experienced and novice teachers, university professors and researchers — secondary school music students have not been heavily involved in the process. It is hypothesized that these students may have valuable information to contribute to the knowledge base regarding the effectiveness of teachers.

The purpose of this study is to determine how pupils view the student teachers in their classrooms. In this study, middle- and high-school music students were asked to evaluate the student teachers assigned to their music classes in the areas found to be most accurate by previous researchers: preparation and delivery, classroom management, knowledge of subject matter/musicianship, and warmth/enthusiasm/fairness (Veldman, 1970), as well as discuss their feelings regarding the experience of being taught by a student teacher.

Method

Participants in this study were middle- and high-school students from a medium-sized southern city, who were enrolled in one of three types of school ensembles: band, choir, and/or orchestra (*N*=136). All of the students were in music classes with a student teacher in residence. Three student teachers were represented in this study. These student teachers were chosen on the basis of their and their mentor teachers' agreement to participate. The classes chosen to participate were those who had first-hand experience with the intern as a teacher: members of

classes that the student teacher had been teaching as the primary instructor for two weeks or more.

Based on the information compiled from the related literature, a questionnaire containing 20 questions was constructed to survey the pupils regarding their experience with the student teacher. In the questionnaire, pupils were asked to respond to questions regarding the student teacher's delivery, classroom management, knowledge of subject matter, and warmth/enthusiasm/fairness.

For each of the first 17 multiple-choice questions, pupils could choose one of three responses: a positive response, a "lukewarm" or neutral response, or a negative response. Each response option was phrased in a manner that was most appropriate for the question. Question 18 featured a list of possible suggestions the pupils might give the student teacher and asks the participant to "select all that apply." The last two questions of the survey featured open-ended questions, added for the purpose of gathering qualitative information regarding any topics of concern not addressed by this exploratory survey. Question 19 invited pupils to make a list in response to the question, "What other advice would you give, to help him/her become a better teacher." Question 20 asked the pupils to respond to the question, "Is there anything else you would like to tell us about your student teacher and how you feel?" The survey can be found in the Appendix.

Surveys were administered by the mentor teacher while the student teacher was out of the room. Pupils were allowed to opt-out of the survey process and were allowed to stop at any time. After the surveys were completed, they were sealed in an envelope by the mentor teacher and delivered to the researcher.

The pupils' responses to the first 18 questions were analyzed quantitatively to answer four research questions: 1) Which items were rated most positively by the pupils as a whole? 2) Which items were rated most negatively by the pupils as a whole? 3) What, if any, significant differences existed by gender on each of the 17 multiple-choice questions? And 4) On the multiple-answer question (#18) which comments were most frequently chosen? The final two open-ended questions were analyzed qualitatively for recurrent themes, in order to gain additional information about the students' perspectives.

To analyze the results and answer the research questions, simple means were initially calculated for the entire group of subjects for each of the 17 multiple-choice questions. This allowed a generalized picture of the students' opinions on these questions and provided an answer to the first two research questions.

For the third research question, in order to determine if there were any significant differences ($p \leq .05$) in pupil opinion by gender, a t-test for independent samples was completed on each of the 17 questions.

To answer the fourth research question, a simple tally was taken on each of the responses chosen by the participants. Of twelve possible responses, students were asked to "choose as many as apply." Each response was counted and added for a total of the number of times each answer was chosen, in order to determine the most frequently selected responses.

Results

In order to answer the first research question, (Which items were rated most positively by the pupils as a whole?), mean responses were calculated for each question. Pupil responses were calculated using a point system: 3 points for the positive answer, 2 points for the neutral

response, and 1 point for the negative answer. These points were averaged for each question. The means were then ranked from 1 (highest) to 17 (lowest) for the 136 participants. The means and their rankings for each question can be found in Table 1.

Table 1

Descriptive Statistics for Survey Responses

Survey Item	Mean	Rank	*SD*
1	2.27	15	.463
2	2.38	12	.667
3	2.64	6	.540
4	2.38	13	.583
5	1.77	17	.666
6	2.27	16	.460
7	2.63	7	.594
8	2.93	1	.278
9	2.85	3	.374
10	2.74	5	.475
11	2.54	10	.594
12	2.90	2	.341
13	2.32	14	.665
14	2.76	4	.475
15	2.61	8	.598
16	2.50	11	.531
17	2.58	9	.539

The five top-ranked items for the 136 pupils show the items with the most general agreement in the group as a whole. The highest ranked item was, "How does the student teacher treat you?' The majority of the pupils ($M = 2.93$) answered positively, "They treat me fairly." The second-highest response ($M = 2.90$) was for, "If someone doesn't understand, how does the Student Teacher react?" The pupils responded, "They are patient and try to help." The third highest mean ($M = 2.85$) was on, "How does the Student Teacher get along with the class?" The majority of the pupils answered, "They are very friendly and nice." The fourth most positive response ($M = 2.76$) was for, "Is the Student Teacher getting better at being a teacher?" The fifth most positive response ($M = 2.73$) was on the question, "Is the Student Teacher prepared for his/her lessons?"

The response that was most negative for the group as a whole ($M = 1.77$) was in response to the question, "Which teacher do you prefer: your regular teacher or the Student Teacher," with the pupils preferring their regular teacher over the student teacher. The four other low-rated questions were "What do you think of the Student Teacher's use of discipline?", "When you found out a Student Teacher would be teaching your class, were you excited or interested?", "Does the Student Teacher make the class interesting?" and "When the Student Teacher is

teaching your class, how do you feel?" With means in the low 2.0 range, the students generally fell in the "neutral" category for these questions.

To answer the third research question, a *t*-test was performed to determine if any significant differences ($p \leq .05$) by gender occurred on any of the multiple-choice questions. Results of the *t*-test for independent samples can be found in Table 2.

Table 2

T-test for independent samples

Item	Gender	Mean	SD	F	p-level
1	male	2.30	.511	3.43	.066
	female	2.26	.439		
2	male	2.33	.732	1.77	.186
	female	2.41	.634		
3	male	2.70	.510	1.20	.141
	female	2.61	.555		
4	male	2.35	.604	.047	.829
	female	2.39	.575		
5	male	1.80	.687	.007	.934
	female	1.76	.659		
6	male	2.24	.480	.030	.862
	female	2.28	.452		
7	male	2.43	.720	19.73	.000*
	female	2.73	.493		
8	male	2.82	.437	54.71	.000*
	female	2.99	.105		
9	male	2.70	.511	54.37	.000*
	female	2.94	.250		
10	male	2.61	.577	18.13	.000*
	female	2.80	.402		
11	male	2.46	.690	7.08	.009*
	female	2.58	.539		
12	male	2.82	.490	16.76	.000*
	female	2.95	.229		
13	male	2.29	.695	.136	.713
	female	2.34	.654		
14	male	2.69	.468	3.28	.072
	female	2.80	.477		
15	male	2.60	.580	.026	.873
	female	2.61	.610		
16	male	2.52	.550	.189	.672
	female	2.49	.524		
17	male	2.63	.489	2.65	.106
	female	2.56	.561		

Notes. * denotes significance at the $p \leq .05$ level
n (male) = 46; *n* (female) = 90

Significant differences by gender were found on six of the 17 multiple-choice questions. On all of the six questions, "What do you think about how the Student Teacher acts," "How does the Student Teacher treat you," "How does the Student Teacher get along with the class," "Is the Student Teacher prepared for his/her lessons," "Is the Student Teacher easy to understand," "If someone doesn't understand, how does the Student Teacher respond," and "Does the Student Teacher make the class interesting," girls answered significantly more positively than did the boys.

For the multiple response question, "What advice would you give to your Student Teacher," the participants' responses were counted. The three most frequently selected items out of 12 were: 1) "Be confident" with 78 responses, 2) "Be more strict with the class" with 55 responses, and 3) "Relax, you're too tense!" with 43 responses. All of the responses with their tallies can be found in Table 3.

Table 3

Descriptive statistics, question #18 "What advice would you give your student teacher?"

Response	Frequency	Rank
Be more strict with the class	55	2
Smile more	27	5
Be more organized	9	9
Be more prepared	10	8
Don't be so strict with us	11	7
Relax, you're too tense!	43	3
Be more patient	8	10
Don't yell or raise your voice	6	11
Be confident	78	1
Be more mature	5	12
Be flexible about things	25	6
Spend more time helping us	37	4

The qualitative data in the two open-ended questions yielded a number of interesting responses from the pupils. On question #19, "What other advice would you give your student teacher?", a number of students commented about overcoming shyness ("Try not to be so shy, students react well to someone who allows them to see their personality," 12th grade choir, female; "Don't be so nice because they might take advantage of you," 10th grade choir, female; "Don't get nervous. Let them know you are the teacher and they have to do as you say. Don't be shy," 10th grade orchestra, female). Numerous comments were also collected regarding management, mostly to encourage the student teacher to maintain discipline ("Don't get the teacher to calm us down," 9th grade band, female; "Don't be scared to punish people," 12th grade choir, female; "Be a little more strict," 6th grade orchestra, male). Other pupils commented on teaching skills ("Try to explain things a tad more clearly," 10th grade choir, male; "Students never ask for help, so look for confused faces," 11th grade choir, female; " I think he talks a little

too much. Needs to conduct more," 10th grade band, male; "Be more prepared. Don't get confused," 10th grade band female).

When asked in question #20, "Is there anything else you would like to say about your student teacher?", pupils again provided a variety of responses. Though some read like a yearbook inscription ("Don't ever change!" 11th grade choir, female), others offered additional insight regarding their experience. Some students expanded on earlier comments regarding management ("The student teacher is a very good teacher. She has grown since the first week. I feel like she needs to be more strict with the class, though. Maybe she doesn't want to add pressure on us. People are going to see how nice she is, so then they'll take advantage of her," 10th grade choir, female), and confidence ("He is a very good teacher, just needs to be more confident," 10th grade band, male). Other pupils expressed appreciation about having a student teacher in their class ("I'm just glad we have two teachers that can help us. I feel good about having a student teacher in class," 10th grade choir, female; "I really felt that student teachers help a lot and I feel I get more experience than normal. There should be more student teachers out to help schools," 11th grade choir, male). Overall, the pupils gave mostly positive comments and wished the student teachers well ("She is patient and helps out as much as she can. She gives us courage to sing loud," 9th grade choir, female; "He is a great teacher, his playing is great playing, it sounds lovely. He can be a great teacher later on because he is mature and talented in his music," 8th grade orchestra, female).

Discussion

This exploratory study was undertaken to gather the reflections of middle- and high-school music students regarding the experience of being taught by student teachers. Because the pupils view the student teachers from a unique perspective, valuable information can be gained from these pupils that may benefit both the student teachers themselves as well as the other professionals involved in teacher education: the university supervisors, methods class instructors, and mentor teachers.

The first research question, which sought to determine which items were rated most positively by the pupils as a whole, was asked in order to discover what pupils enjoyed or appreciated about the student teacher in their class, or what the student teacher was doing well. In general, the music student participants in the survey were quite positive about their student teacher. This supports previous research that found that secondary students tended to rate teachers positively, particularly if they had good delivery skills (Madsen, 2003). Of the five highest rated items, three of the questions primarily addressed personal, relationship-oriented topics. The pupils indicated that the student teacher was fair, patient and helpful, and was friendly to the class. From these results, one could presume that student teachers were generally successful at integrating themselves into the "community" of the ensembles and were developing positive relationships with students—a valuable attribute for teachers (Teachout, 1997; Whitney et al., 2005-2006, Wubbels & Brekelman, 2005). Qualitatively, some students offered advice about building relationships, such as ""Relate with the students. Don't be so quiet," (9th grade choir, female). Additional research is needed to quantify precisely what personal characteristics music students find important in developing positive relationships with their teachers.

The other two highly-rated questions focused on the development of teaching skills. The pupils indicated a belief that the student teacher was improving at "being a teacher" since their preliminary days at the school. As one student wrote, "He is pretty good at it and I think that he is getting better," (9th grade band, female). This indicates that the pupils were making evaluative

judgments regarding the student teacher's teaching skill. Further investigation is now needed to determine on what factors pupils base this evaluation. Previous research would suggest that delivery, intensity, and classroom management may all affect student perceptions of effectiveness at "being a teacher" (Madsen, 2003; Madsen & Cassidy, 2005; Madsen & Geringer, 1989).

The second research question asked, "Which items were rated most negatively by the pupils as a whole?" This question sought to determine the areas in which pupils felt their student teacher needed additional improvement. The lowest-rated question asked the pupils which teacher they would prefer on a permanent basis: their regular teacher (the mentor teacher) or the student teacher. Perhaps not surprisingly, pupils still preferred their regular teacher over the student teacher. The pupils have a relationship with their ensemble director that has been established over time; the 12-week experience with the student teacher, though believed to be "fair" and "nice" does not appear to be sufficient for most students to prefer the student teacher over their experienced teacher, although one student did comment, "I wouldn't mind having her as my regular teacher," (9th grade choir, female). Additional research may lead us toward quantifying which characteristics the pupils prefer in each teacher and what may affect a student teacher's desirability as a permanent teacher.

Another lower rated item, though the means actually puts these next items in the "neutral" rather than the "negative" range, was "What do you think of the Student Teacher's use of discipline?" As discipline is often one of the most challenging skills for student teachers and a vital part of the student teaching experience, it was important to find out if pupils felt that the student teacher's use of discipline was too much, too little, or not enough. Previous research mentioned that middle school students in particular focused on teachers' use of management (Madsen, 2003). With a mean at near the middle of the range, it appears that the music students felt that the student teacher's use of discipline was appropriate. This particular finding may be attributed to the similarity of the student teacher's classroom management style and the management techniques modeled by the mentor teacher that were familiar to and accepted by the pupils. Qualitatively, a large number of students did offer advice on classroom management to the student teachers, primarily warning them not to be "too nice" and fearing that the young teachers would be "taken advantage of."

Another question that was rated lower by pupils was "When you found out a Student Teacher would be teaching your class, were you excited or interested?" This may indicate that more time could be taken by the mentor teacher to prepare the pupils for the student teacher's arrival and to inform the pupils of what the entire experience may be like. It is also possible that pupils based their answers on prior experiences with student teachers or a general lack of experience with student teachers in other classes.

The other two lower-rated questions, "Does the Student Teacher make the class interesting?" and "When the Student Teacher is teaching your class, how do you feel?" appear to deal with delivery or presentation skills such as pacing and use of rehearsal time, an important aspect of teacher effectiveness (Hamann, et al., 2000). Again, both questions' means indicate a neutral response. Research regarding the use of rehearsal time has found that novice teachers spent more class time with verbal instruction and less time performing than did their more experienced counterparts (Goolsby, 1999); this may explain the students' reaction. Qualitatively, several students did mention "talking too much" and "Don't get off topic." Further investigation is needed to determine which specific factors (e.g., intensity, magnitude, pacing) affect student evaluations.

The third research question asked, "What, if any, significant differences existed by gender on each of the 17 multiple-choice questions?" Six items showed significant gender differences, with girls rating the student teacher more positively than did boys. Three of the six questions were relationship-oriented questions, which may make a certain amount of sense as girls are anecdotally known for their interest in relationships and personal connection. The other two items indicated that the girls found the student teachers more interesting, prepared, and easy to understand than did their male counterparts. Previous gender research in music classes has indicated that girls are typically more positive towards their music classes in general, so these results may be indicative of a similar result (Boswell, 1991). To further quantify these results, it would be necessary to compare girls' and boys' ratings of a student teacher with their ratings of the experienced teacher as well as their opinions about their music class before offering a strict interpretation of the gender differences in these results. Also, further comparisons could be made regarding interactions between male and female teachers and their male and female students.

In conclusion, it appears that secondary school ensemble members do have opinions and insight regarding the student teachers in their classrooms. This exploratory study can now be used as a starting point to further refine and quantify what role pupils could play in the evaluation of teaching effectiveness.

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Appendix

Student Teacher Survey Items

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1. When you found out that a student teacher would be teaching your class, were you excited and interested?
   - a. I was excited   b. I wasn't sure   c. I was disappointed

2. How did you feel during the *first week* the student teacher was in your class?
   - a. Glad they were there
   - b. Sometimes glad, sometimes not
   - c. I didn't like it

3. How do you feel about having the Student Teacher in your class NOW?
   - a. I like having him/her here
   - b. Sometimes glad, sometimes not
   - c. I don't want him/her here.

4. When the Student Teacher is teaching your class, how do you feel?
   - a. I like it when they teach
   - b. Sometimes it's ok; sometimes I don't like it.
   - c. I don't like it when they teach

5. Which teacher do you prefer: your regular teacher or your Student Teacher?
   - a. I wish our Student Teacher would replace our regular teacher permanently.
   - b. I don't care which teacher we have—either one is fine.
   - c. I would rather have our regular teacher than the Student Teacher.

6. What do you think of the Student Teacher's use of discipline?
   - a. They are not strict enough with the class
   - b. They are just right: not too strict and not too lenient
   - c. They are too strict

7. What do you think about how the Student Teacher acts?
   - a. They act like a teacher, never like a student.
   - b. Sometimes they act like a teacher, sometimes like a kid
   - c. They act more like a student (one of us) than a teacher

8. How does the Student Teacher treat you?
   - a. They treat me fairly
   - b. Sometimes they are fair, but sometimes not
   - c. They are unfair

9. How does the Student Teacher get along with the class?
   - a. They are very friendly and nice
   - b. I'm never sure whether they'll be nice or upset
   - c. They are not nice to the class

10. Is the Student Teacher prepared for his/her lessons?
    - a. They always know what they're doing
    - b. Occasionally they seem confused about what to do
    - c. Usually they don't know what they're doing

11. Is the Student Teacher easy to understand?
    - a. We always understand what they want us to do
    - b. Sometimes we don't know what they want
    - c. Usually they are confusing; we don't know what to do.

12. If someone doesn't understand, how does the Student Teacher react?
    - a. They are patient and try to help
    - b. They don't notice that someone needs help
    - c. They get frustrated, angry, or can't help the person

13. Does the Student Teacher make the class interesting?
    - a. Yes, they make the lessons interesting
    - b. Sometimes it's ok, sometimes not

      c.   No, usually it's boring

14. Is the Student Teacher getting better at being a teacher?
    a. Yes, they're much better than the first weeks
    b. Maybe a little better, but not that much
    c. No, they are the same as when they got here

15. Is the student teacher enthusiastic?
    a. Yes, they smile and have lots of energy
    b. Sometimes—it depends on the day
    c. No, they aren't usually enthusiastic

16. Do you think the Student Teacher is a good teacher?
    a. Yes, they're an excellent teacher
    b. They're ok, average
    c. No, they're not a very good teacher

17. Do you think the Student Teacher is a good musician?
    a. Yes, they are very talented
    b. I'm not sure, we haven't seen them perform much
    c. No, I don't think they're very good.

18. What advice would you give to your Student Teacher?
    (CIRCLE AS MANY AS YOU AGREE WITH)
    a. Be more strict with the class
    b. Smile more
    c. Be more organized
    d. Be more prepared
    e. Don't be so strict with us
    f. Relax, you're too tense!
    g. Be more patient
    h. Don't yell or raise your voice
    i. Be confident
    j. Be more mature
    k. Be flexible about things
    l. Spend more time helping us

19. What other advice would you give, to help them become a better teacher?

    a._____
    b._____
    c._____
    d._____

20. Is there anything else you would like to tell us about your student teacher and how you feel?

Edited by
Mary Ellen Cavitt, Texas State University—San Marcos

The Effects of Constant and Intermittent Verbal Feedback on Complex Motor Skill Development

Jacqueline C. Henninger
The University of Texas at Austin

Teaching effectively requires one to implement several techniques in a manner that elicits desired responses from students. Some of these techniques include curriculum design, instructional sequencing, and feedback. Feedback, information received about the consequences of our behavior, can come from a variety of sources (Duke, 2004). In a music lesson, for example, students receive feedback from their instruments and/or voices, their peers, and their teacher. However, for the feedback to function appropriately for the learner, it must be delivered at the appropriate time and in the most effective manner. How do we know if the feedback administered is effectively leading a student to the accomplishment of music goals? Was it delivered frequently enough? Was it administered too often? Furthermore, was the quality of the feedback statement appropriate for the complexity of the skill being learned?

"Feedback is any stimulus occurring coincident with or subsequent to a given behavior that a learner associates with the behavior" (Duke, 2004, p. 140). Although many educators associate feedback with teacher behaviors, feedback can come from a variety of sources, such as the heat emitted from an oven door, a visual representation from a computer screen, and the sounds from a musical instrument. The purpose of feedback is to "provide information and motivate behavior" (p.146). When analyzing the effect of feedback on the development of motor skills, augmented feedback is designed to be "rewarding, motivational, or informational" (Shea & Wulf, 1999, p. 555). For feedback to have the greatest impact on a learner, it should provide information that enhances or expands upon the feedback provided to the learner himself. For instance, when a student misses a note in a musical passage, instead of simply pointing out the incorrect pitch, the teacher should provide information that guides the student to improve his performance in a deeper, more meaningful manner. The student, having heard the incorrect pitch, may benefit most from specific feedback regarding the correct fingering or embouchure formation that would improve their performance of that missed pitch. Providing specific feedback that the learner does not discern himself will have a greater influence on the future behaviors of that learner.

In addition to varying the level of specificity, feedback can come in several other forms. Research has been conducted in fields outside of music education (e.g., kinesiology, physical therapy, and chiropractic work) to examine the effects of various forms of feedback on the development of motor skills. Some of these forms of feedback include concurrent and terminal/postresponse; high frequency and reduced frequency; instantaneous and delayed; and

intermittent and constant. The effectiveness of each of these forms of feedback varies depending on the complexity of the motor skill that is being learned.

Motor skills can be classified as simple or complex. Simple motor skills are "skills that can be mastered in a single practice session, and appear to be artificial" (Wulf & Shea, 2002, p. 186). Aiming tasks and lever-patterning tasks are examples of simple motor skills in that they include only one movement degree of freedom (e.g., forward-backward, push-pull). Complex motor skills "cannot be mastered in a single practice session" (p. 186) and instead require several days of practice to achieve accuracy. Ski simulator and balancing tasks are examples of complex skills as is learning to play an instrument (e.g., flute, guitar, percussion, piano, trumpet, and violin). As the complexity of a task changes, so should the feedback.

Kinesiology, the formal study of the physiology and mechanics of body movement, has contributed several studies to the body of research literature on motor skill learning (Park et al., 2000; Schmidt & Wulf, 1997; Sherwood & Kaiser, 2002; Swinnen et al., 1990; Swinnen et al., 1993; Swinnen et al., 1998; Wulf et al., 1998; and Wulf et al., 1999). When examining the effects of reduced-frequency concurrent feedback (i.e., feedback presented to a learner during the movement) and terminal feedback (i.e., feedback provided to a learner following the completion of a movement), Park et al. (2000) found that each form of feedback is beneficial to the learner depending upon the period during which the feedback is provided. Park et al. conducted two experiments during which the frequency of concurrent feedback was manipulated to determine its effect on subject performance during acquisition (i.e., practice period) and retention (i.e., period following practice trials during which true learning is assessed). Participants were instructed to produce waveforms presented on a computer monitor and received various forms of feedback depending on the experimental group to which they had been randomly assigned. Participants who received visual feedback during every trial (100% Concurrent) of acquisition did not perform as well as those who received a reduced-frequency of concurrent feedback (50% Concurrent). Additionally, participants that received terminal feedback (100% Terminal) after every trial did not perform as well during the period of acquisition as those who received a reduced-frequency of concurrent feedback. Reduced-frequency concurrent feedback provided better guidance during acquisition than did the terminal feedback and other forms of concurrent feedback. The results of the retention test, however, indicated higher levels of performance for the participants who received terminal feedback. Clearly, the point at which learners receive feedback regarding their performance of a skill has different effects on their ability to acquire and retain the targeted skill.

These findings were supported with the research of Schmidt and Wulf (1997). Schmidt and Wulf analyzed the effects of concurrent visual feedback on the learning of a complex motor skill. Their experiments, which involved the learning of a complex arm movement, also found that participants performed well during practice trials when they were recipients of concurrent visual feedback. During retention, however, it was determined that the accuracy and stabilization levels of the skill decreased. Continuous feedback, although helpful while practicing, had a degrading effect on the true learning of this skill.

Additional research supports this finding that concurrent visual feedback has a positive effect on performance and learning (Shea & Wulf, 1999). Through the use of a stabilometer task, in which subjects were provided opportunities to practice maintaining their balance, Shea and Wulf examined the learning effects of instructions and feedback with internal or external focus. Due to the effectiveness of the concurrent visual feedback, the findings suggest that feedback may actually promote an external focus of attention. In both practice and retention trials, regardless

of the instructions provided, participants in the feedback conditions performed better than did those participants who did not receive feedback.

Sherwood and Kaiser (2002) investigated the effectiveness of this type of feedback in the teaching of a bimanual aiming movement. Kinesiology students were instructed to use hand levers to make rapid reversal movements with both limbs. Unlike the previous studies, this investigation found that concurrent visual feedback led to fewer errors in the performance of this task. Students were less successful when they received no feedback. Although terminal feedback was not investigated, the effectiveness of concurrent feedback was supported in this investigation of feedback and its use in the teaching of a complex motor skill.

Swinnen et al. (1993) and Swinnen et al. (1998) conducted additional studies investigating the role of feedback in the development of bimanual skills and interlimb coordination. Both studies found that augmented information feedback (i.e., visual feedback that addresses physical movement and its relationship to the goal) is necessary for the development of such skills. This form of feedback enabled participants to experience a higher level of success than did reduced and normal feedback (Swinnen et al., 1998).

The point at which Knowledge of Results (KR), or terminal feedback, is communicated can also have an effect on a learner's performance during acquisition and retention. Instantaneous KR occurs when participants receive feedback immediately following their completion of a task. Delayed KR occurs when a period of time, typically a predetermined number of seconds, passes between the conclusion of a task and the provision of feedback. Depending on the timing of the KR, subjects demonstrate different levels of accomplishment and success during acquisition and retention of slide movement and ball-bat tasks (Swinnen et al., 1990). Instantaneous KR did not have an effect on acquisition, but it was detrimental to retention. Apparently, the instantaneous KR negatively affects the learning of error-detection capabilities, which become more important when KR is subsequently removed in a test of retention. Therefore, delayed KR, which provides the learner with an opportunity to self-evaluate and detect potential errors, produces a higher level of learning than instantaneous KR.

Another characteristic of feedback that may have an effect on the development of complex motor skills is the frequency with which it is delivered. Research investigating the effects of feedback on the development of skills has found that reduced feedback frequency was more beneficial for learning (Schmidt & Wulf, 1997). Wulf et al. (1998) conducted two experiments within which participants learned how to produce slalom-type movements on a ski-simulator, which is a complex motor skill. Unlike the simple motor skill findings, Wulf et al. found that participants who received the most feedback (100%) demonstrated the highest levels of improvement in their performance of a complex motor skill. This study also found that participants who received a reduced frequency level of feedback (50%) yielded the same performance results as did those who received no feedback (0%). The results of this study support the theory that the findings of simple motor skill research are not generalizable to the development of complex skills. These findings were supported in later research that investigated the effects of blocked and serial feedback.

Research conducted in the field of physical therapy has also examined the effects of concurrent and terminal feedback on the development of complex motor skills. Nondisabled adults participated in a study that investigated the effects of frequent and concurrent kinetic (i.e., movement) feedback on the learning of an isometric elbow extension task (Vander Linden et al., 1993). Although subjects in the concurrent feedback group were very successful during the acquisition blocks, their performances on the immediate and delayed retention tests were not as stellar. These data suggest that concurrent feedback is less effective than terminal feedback

when attempting to effect change in motor task performances. Subjects in the concurrent feedback condition became too dependent on the feedback, which prevented them from performing successfully without it.

Winstein et al. (1996) also found concurrent feedback to be most beneficial during practice trials when compared to terminal/postresponse feedback. For this investigation, subjects were taught a commonly learned physical therapy skill: Partial weight bearing (PWB). Although concurrent feedback encouraged high levels of performance accuracy and consistency, these performance levels were not maintained once feedback was withdrawn. During retention, subjects who received terminal/postresponse feedback experienced the highest levels of success. These findings are similar to those in some kinesiology research (e.g., Schmidt & Wulf, 1997).

Concurrent and terminal/postresponse feedback can be used effectively during different trials when learning complex skills. One must be careful, however, when transitioning from practice to retention trials. To improve participant performance during retention, one should gradually reduce the frequency of concurrent feedback during practice trials. Administering concurrent feedback along with postresponse feedback prior to retention may increase the likelihood of subjects performing complex motor skills more accurately.

All of the studies reviewed in kinesiology and physical therapy have investigated the effects of various forms of visual feedback (e.g., high frequency and reduced frequency; instantaneous and delayed) on the development of complex motor skills. In music, however, the majority of feedback provided to our students is verbal or auditory. Pringle (2003) investigated the effects of verbal feedback on the learning of a palpation skill. "Motion palpation is one of the most commonly used methods for determining where a chiropractor will apply the force of manipulation" (p. 2). In teaching this skill, instructors demonstrate proper techniques to the class and students subsequently emulate the faculty model. During these modeling episodes, a high frequency of verbal feedback is provided in an attempt to positively affect the learning process of the students who are practicing the technique. Similar to the findings of studies conducted in kinesiology, Pringle (2003) found that constant verbal feedback enabled students to achieve high levels of success during acquisition (i.e., practice). Intermittent verbal feedback, however, produced the highest levels of retention, a finding obtained in tests of other skills as well (Schmidt & Wulf, 1997; Winstein et al., 1996).

Of course, techniques of instruction observed in these investigations are much like those used in all motor skill learning, including music learning (e.g., teacher modeling of techniques, in-class practice by students, and high rates of verbal feedback). The purpose of the current study was to determine the effects of varying forms of feedback (intermittent versus constant) on complex motor skill development and retention levels within a homogeneous instrumental music lesson.

Method

Preservice teachers ($N = 10$) enrolled in an undergraduate music education program at a large university in the southwestern region of the country participated in the current study. All participants were in their final semester of study, student teaching in the local schools, and were practicing their teaching in the context of homogeneous instrumental ensemble rehearsals taught to their senior-level peers. The ensemble consisted of soprano recorders and all performers and

teachers had received at least one semester of instruction on this instrument prior to the academic term during which this study was administered.

Participants were instructed to teach their peers to play a two- to three-part arrangement with accurate notes, rhythms, intonation, and additional musical qualities as was appropriate to the piece. All arrangements were written by the teachers of the lessons and were notated in an appropriate tessitura for the soprano recorder. Prior to teaching the ten-minute lesson, participants were also instructed to write a lesson plan that indicated the instructional objective, materials, and sequence of student behaviors throughout the instructional period. While preparing for these lessons, several aspects of teaching and learning were discussed, including the effective use of feedback. Although participants were not instructed to provide feedback to the learners on any particular schedule, they had been encouraged to incorporate specific directives (i.e., statements instructing the students to take specific action in the subsequent performance trial) and feedback statements (i.e., evaluative statements that described student performance in a preceding performance trial) into their teaching (Duke & Henninger, 1998).

Half of the participants ($n = 5$) provided intermittent feedback to their student musicians, while the other half provided constant feedback throughout their lessons. Intermittent feedback was defined as specific teacher directives, positive feedback, and negative feedback statements that occurred at a rate equal to or less than 3.0 per minute. Constant feedback was defined as the presence of the aforementioned teacher verbalizations at a rate greater than 3.0 per minute.

A graduate assistant recorded all lessons onto a mini-DV tape with a digital camera. These recorded lessons were subsequently digitized with the use of iMovie (for importing the video) and QuickTime (for the use of exporting the video). The QuickTime file of each lesson was viewed and analyzed to gather data about teacher verbal feedback, directives, and student performance achievement.

The author observed teacher and student behaviors throughout the 10-minute lesson and recorded observed data using a computerized observation program, SCRIBE: Simple Computer Recording Interface for Behavioral Evaluation (Duke & Stammen, 2006). Data included frequencies and mean rates of (a) teacher feedback statements (specific positive and specific negative), (b) teacher directives, (c) accuracy of student performance trials, and (d) accuracy of students' final performances.

Results

Frequencies of specific verbal directives and feedback statements for each teacher in the Constant Feedback Condition ranged from a low of 35 to a high of 115. Frequencies of specific verbal directives and feedback statements for each teacher in the Intermittent Feedback Condition ranged from a low of 14 to a high of 29.

Teachers in the Constant Feedback Condition provided a total of 301 specific directives and feedback statements ($M = 60.2$). Teachers in the Intermittent Feedback Condition provided a total of 119 specific verbal directives and feedback statements ($M = 23.8$), which represents less than 40% of the total number of directives and feedback statements provided by teachers in the Constant Feedback Condition. See Table 1 for frequencies and means of teacher feedback statements and directives.

Table 1
Frequencies and Means of Teacher Directives and Feedback Statements by Experimental Condition

Experimental Condition

Verbalization	Frequency	Mean
Constant Feedback (*n* = 5)		
Specific Directives	159	31.8
Specific Positive Feedback	84	16.8
Specific Negative Feedback	58	11.6
Total	301	60.2
Intermittent Feedback (*n* = 5)		
Specific Directives	41	8.2
Specific Positive Feedback	53	10.6
Specific Negative Feedback	25	5.0
Total	119	23.8

Students whose teachers were in the Constant Feedback Condition had a higher frequency of accurate and inaccurate performance trials than did those whose teachers were in the Intermittent Feedback Condition. Students who received feedback constantly performed a total of 266 performance trials (*M* = 53.2), whereas student recipients of intermittent feedback performed a total of 199 trials (*M* = 39.8).

Although the number of accurate performance trials for those in the Constant Feedback Condition was higher (107) than was the number of accurate performance trials for those in the Intermittent Feedback Condition (98), greater differences were found between the groups when examining the frequencies of inaccurate performance trials. Students in the Constant Feedback Condition had 154 inaccurate trials, which represented 57.9% of their performance trials. Those in the Intermittent Feedback Condition had 96 inaccurate trials, which represented 48.2% of their performance trials.

The quality of the students' final performances also varied depending on the experimental condition to which their teachers were assigned. Students who rehearsed under the Constant Feedback Condition performed 60% (i.e., 3 out of 5) of their final performances accurately, whereas those who rehearsed under the Intermittent Feedback Condition performed 80% (i.e., 4 out of 5) of their final performances accurately. See Table 2 for frequencies, means, and evaluations of student performances.

Table 2
Evaluations, Frequencies and Means of Student Performances

Experimental Condition

Student Performances	Frequency	Mean
Constant Feedback (*n* = 5)		
Accurate Performance Trials	107	21.4
Inaccurate Performance Trials	154	30.8
Final Performance Quality		
Accurate	2	.4
Inaccurate	3	.6
Total Trials	266	53.2
Intermittent Feedback (*n* = 5)		
Accurate Performance Trials	98	19.6
Inaccurate Performance Trials	96	19.2
Final Performance Quality		
Accurate	4	.8
Inaccurate	1	.2
Total Trials	199	39.8

Discussion

To determine the effects of constant and intermittent feedback on complex motor skill development in music, the homogeneous instrumental ensemble rehearsals of preservice teachers were analyzed. Students who were the recipients of constant feedback while participating in recorder ensemble lessons had a higher frequency of performance trials than did those who received feedback intermittently. Students in the Constant Feedback Condition may have played more because additional performance trials were necessary to improve identified targets once feedback had been provided. Since the Constant Feedback teachers were providing more feedback, they were making more explicit evaluations of student performances. With additional teacher evaluations came additional opportunities for the students to perform in hopes of improving each performance.

Students who received instruction in the Constant Feedback Condition performed a higher frequency of inaccurate performance trials than did those in the Intermittent Feedback Condition. These findings contradict the findings of earlier studies outside of music education, which have indicated that concurrent, continuous, or constant feedback enables students to achieve a high level of success during acquisition or practice (e.g., Pringle, 2003; Winstein, et al., 1996). These differences in findings may be attributable to the differences in tasks (e.g., motion palpation versus music).

Although the students who received feedback intermittently had fewer performance trials, their final performances were more accurate than were the final performances of the students who received constant feedback. The students who received feedback intermittently were provided with more opportunities to conduct independent evaluations and corrections than were those who received feedback constantly. Those in the Constant Feedback Condition may have become dependent on the teacher for verbal feedback and directives, which could have contributed to their less than stellar performances at the conclusion of the lesson. Most of the teachers did not provide much verbal guidance during final performances, which may have made it difficult for those students to transfer the feedback and directives received during acquisition (i.e., practice session) to this period during which retention was measured (i.e., final performance).

Clearly, students who received intermittent feedback while developing a complex motor skill demonstrated higher levels of retention at the end of the lesson than did those who received constant feedback. These findings are supported in other research outside of music education (Pringle, 2003; Schmidt and Wulf, 1997; and Winstein, et al., 1996). Each of these studies found that terminal/postresponse and intermittent feedback produced the highest levels of retention and yielded a more superior form of learning than did concurrent, constant, or continuous feedback, the last of which has been shown to have a degrading effect on actual learning.

One should exercise caution, however, when generalizing these findings given the musical skill level of the learners. The student musicians who participated in this project were all music education majors who were either vocalists or played a percussion, string, or wind instrument. With this musical background comes a highly advanced level of music knowledge and skill that may not be found in your typical "beginner" recorder lesson. Therefore, the ability these student musicians possessed to self-analyze and correct may be quite different from the skills possessed by a more typical "novice" recorder player. Providing "beginner" recorder students with more frequent feedback during the initial stages of learning may be more necessary since they are acquiring a new skill and are incapable of transferring principles learned in one context to a different context.

The findings of this study have great implications for instructional approaches used in the instrumental music classroom as well as the approaches that are taken in the preparation of prospective music educators. Clearly, depending on the skill level of the learner, students demonstrate a higher level of learning when they receive feedback intermittently. Although this may be contrary to what is taught in many instructional methods courses about the use of feedback, clearly learners can benefit by receiving specific feedback on a less frequent basis. This approach to providing learners with feedback may foster a certain level of student independence that positively affects the overall musical development of the learner. Additional research is warranted that investigates the effects of various forms of feedback on learners who possess different abilities and that measures retention levels of newly acquired complex skills across multiple days. The findings of such projects could yield findings that are highly beneficial to musicians, music educators, and those in the sciences.

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Edited by
Mary Ellen Cavitt, Texas State University—San Marcos

The Effect of Modality on Expressive Performance Among Experienced Musicians

Janice N. Killian
Texas Tech University
Marilyn J. Kostka
Northern Arizona University
Lynn Basinger
Armstrong Atlantic State University

Expressiveness in performance is a major goal of most, if not all, musicians and teachers. Reimer (1970) articulated the thoughts of the profession when he stated:

> The depth of feelingfulness presented by art's aesthetic qualities can range from the most superficial to the most profound. Any success at all in capturing and presenting a sense of 'expressiveness,' that is, of 'feelingfulness,' is artistic success to that degree. (p. 39)

Reimer's "feelingfulness," or expressivity, is often defined in broad, metaphorical terms such as "shaping the phrase" or " play with a flowing melody." In all likelihood, such imagery is useful for performers, but there seems a need for more precise vocabulary with which to define the elements contributing to beautiful music performance. Extant research data on exactly what is meant by "expressiveness" do not appear to be readily available.

Some researchers in recent years have attempted to identify more specific ways in which expressiveness may be defined and evaluated. For example, Duke (2005) listed, and defined for assessment, three elements of expressive performance in music, including:

1) Tempo: Changes tempo appropriately in performance when applicable (independently creates an expressive effect - rubato, ritardando, etc.)
2) Articulation: Performs notes with different articulation as appropriate (e.g., slurred, separated, accented)
3) Dynamics/Balance: Performs minor variations in loudness to create an expressive effect. (p. 40-41)

Perhaps one's ability to perform with depth of emotion or perceive expressiveness when listening is closely related to an "aesthetic response" because in both cases, the performer or listener must be completely engaged in or focused on the music. Focus of attention while

listening was investigated by Madsen and Geringer (1990) and Geringer and Madsen (1996) to determine what specific elements of music a person might focus upon which would presumably contribute to a person's aesthetic interest. These studies, as well as others (Madsen, 1997; Madsen, Geringer & Fredrickson, 1997), were conducted via the continuous response digital interface (CRDI). By using this non-verbal method of assessment, it was possible for researchers to obtain data concerning which elements of music were most prominent, or commanding of subjects' attention, as they were listening. Additionally, they were able to measure the degree of attention of subjects. Conclusions from these related studies appear to indicate that strength of responses was closely related to the listener's focus of attention to specific elements, (rhythm, melody, dynamics. etc.), and that across different pieces of music, rhythm was the only common element which was consistently related to listeners' aesthetic responses (Frederickson, 1995). It might be questioned whether musicians have the same response patterns to expressive qualities while performing.

A somewhat subtler aspect of expressiveness in music is the use of rubato, which has been the subject of a series of investigations by Johnson (1996, 1997, 2003). He concluded that performances with rubato were viewed by listeners as more musical than those without, and that both musicians and non-musicians tended to define rubato with words that were vague and inconsistent with performances. Others speculate that a certain amount of uniformity in performance expressiveness may be the result of *inherent* musical characteristics within the structure of the piece (Gabrielsson, 1982).

Specific techniques for teaching expressivity, especially the words used to describe expressivity, have received research interest. For many teachers, the goal of teaching individual students and groups how to perform expressively may be achieved in many ways, including use of aural models (Sang, 1987), verbal instruction using concrete terms, and verbal instruction using metaphor (Woody, 2006). The use of metaphor may be particularly useful since there appears to be a common body of words or descriptors that are used by adults and children when describing the same pieces of music (Cassidy & Speer, 1990; Geringer, Cassidy & Byo, 1996). While most of the commonly used terms were non-musical, both children and adults also used a large number of analytical comments, particularly in respect to instrumentation (Cassidy, 1994; Flowers, 1984). However, finding appropriate terms for other expressive aspects of music such as mode, melody, pitch, texture, and harmony seemed to be more difficult for young people (Cassidy & Speer, 1990; Flowers, 1983; 1984; Hair, 1981). Sheldon (2004) compared adult listeners' use of what she called "figurative language" with use of musical terminology when identifying musical expression, and reported that the subjects selected a wider variety of figurative statements than musical terminology.

While identification of musical elements with verbal labels has been rather extensively studied, Sims (1995) added another element, by comparing aural identification (listening) with production (singing). Sims reported that her subjects (in this case children) were better able to demonstrate musical elements through aural identification than they were by expressing the elements through production.

In a study particularly related to our present investigation, identification of musical elements (major and minor) was examined by Kostka and Riemer (1992) who used visual representation of tonal patterns, rather than verbal labels, to determine if children could discriminate major and minor modes across various ranges and tempos. The results of this study showed that children were able to identify major mode more accurately when paired with a high register, and minor mode when paired with low register while tempo did not appear to affect their judgment.

Given the agreement regarding the value of expressive performance, but the lack of

definition of what comprises an expressive performance or the words we use to refer to musical expressivity, we designed this study to examine operant behavior when musicians are asked to perform "expressively." Of specific interest were the following questions:

1) In the absence of written cues, what expressive factors would performers emphasize?
2) Would expressive factors differ in major and minor versions of the same piece?
3) Would participants' post-performance analyses vary by modality of selections?
4) What adjectives would participants use to describe the major and minor selections?

Method

Participants for this study included music majors (*N*=40) from two large western and southwestern schools of music. All participants were given the same directions:

> We are interested in what musicians do when given notation with no expressive markings. Please practice the following short pieces as long as you like and when you are ready, your performance will be recorded. Remember to play as expressively as possible.

At no time throughout the study were the words "major" or "minor" used to refer to the two selections. All participants were volunteer music majors. Participants from one university (*n*=20) performed the excerpts on their primary instruments, while music majors from the other university (*n*=20) performed on piano as a secondary instrument. Thus we were able to evaluate the effects of playing on a primary versus secondary instrument, and to compare expressivity on solo and chordal instruments. All participants were shown the identical pair of selections especially composed for this study, one in major and the other in minor. Pianists viewed the two 8-measure selections written hymn-style on two staves; soloists viewed the same two staves with a single melody line added above. Major/minor presentations were counterbalanced for possible order effects. In addition, keys were counterbalanced (G/g and A/a) so that pianists, regardless of counterbalanced order, always received one selection that could be played on all white keys. The major and minor selections appear in Figures 1 and 2.

Figure 1. Major Selection.

_____

Figure 2. Minor Selection.

_____

   Prior to practicing the selections, participants filled out a consent form and a brief informational survey including year in school, major instrument, and length of time spent studying this instrument. Participants were recorded individually on a Sony B100 minidisk recorder (at one university) and on an Olympus VN 2100pc digital recorder (at a second university).

   Care was taken to make the recording setting consistent for each individual's performance of the two selections. Since the purpose of this study was to compare how a single musician performs in two different modes, it is important to note that each participant recorded the two selections sequentially in the same setting. Thus we considered the recordings to be comparable within but not necessarily between participants.

   Following the recording of the two selections, each participant was asked which selection he/she performed most expressively. Additionally, because we were interested in examining the vocabulary musicians used when referring to major versus minor selections, we asked each participant to list two adjectives that described selections 1 and 2.

Results

   Subsequently recordings were edited to include only the actual performance and were analyzed using *Adobe Audition* software (version 1.5.0). *Adobe Audition* allows measurement of

the length of recorded selections in seconds (as a measurement of tempo) as well as minimum and maximum RMS (root mean square) amplitude expressed in decibels (as a measure of dynamic range). Again, it should be noted that each participant was compared only with himself. Thus data used for analysis consisted only of within subject difference scores. Because of possible differences in recording equipment and settings, we avoided comparisons between participant responses. Expressivity data thus consisted of:

1) tempo as measured by minor selection length (in seconds) minus major selection length;
2) dynamic ranges as measured by maximum RMS amplitude minus minimum RMS amplitude (in decibels) for each selection;
3) self-evaluation of "most expressive" performance; and
4) participants' verbal descriptors of the two selections.

Major/Minor Differences in Amplitude (dynamic range)

To analyze possible dynamic contrasts, we used *Adobe Audition* software that reported RMS (root mean square) maximum and minimum amplitude ranges in decibels. "The root-mean-square amplitude (RMS amplitude) of a signal measures the average amplitude of a sound wave over a given period…." and "represents the 'average' amplitude of an array of sample values" (Burg, 2007). To compare the within subject changes between major and minor selections, we analyzed only the difference between each participant's maximum and minimum RMS score for both his/her major and minor selections (participants = 40 x 2 selections = 80 RMS difference scores). Additionally, we grouped the 40 participants into those performing on their primary (*n*=25) or secondary instrument (*n*=15), and again into those performing on solo instruments (*n*=20) or chordal instruments (*n*=20). We also noted the instrument families represented (brass = 6, piano = 20, strings = 4, voice = 7 and woodwinds = 3 performers).

Major/Minor Differences in Amplitude Ranges (dynamics)

Results of a single group t-test using RMS amplitude difference scores as the dependent measure indicated that overall minor selections were performed with a significantly wider dynamic range than major selections (*t* [1, 79] = 64.316, *p* <.0001). ANOVA analyses indicated that solo performances exhibited significantly wider dynamic ranges than chordal performances (*F* [1,76] = 137.533, *p* <.0001), but no significant differences appeared between major/minor x solo/chordal (*F* [1,76] = 0.340, *p* = .5613). No interactions were significant. Similarly, among those performing on their primary instrument, modality made no significant difference (*F* [1,76] = 0.751, *p* = .3890). Primary instrument performers, however, demonstrated significantly wider dynamic ranges than those performing on secondary instruments (*F* [1, 76]=26.389, *p*<.0001). No interactions were significant. Further examination of instrument families confirmed the above statistics, revealing that all solo families (brass, strings, voice, woodwinds) used significantly wider ranges than did pianists (*p* <.0001).

RMS decibel readings ranged from -14.04 to -92.95 decibels, with average differences within an individual selection ranging between 32.94 and 66.33 RMS decibels. The RMS measurement assumes decibel ranges as an envelope between -1 and 0 (Burg, 2007). Thus all measurements are in a negative direction, but are reported here as positive integers. The means and standard deviations of RMS amplitude ranges appear in Table 1.

Table 1
RMS Amplitude Ranges of Major and Minor Selections (in decibels)

Dynamic Range (Max-Min Db)	Count	Mean	SD
Major Selections	40	56.311	8.369
Minor Selections	40	56.935	7.440
Chordal	40	50.350	6.503
Solo*	40	62.896	1.612
Primary *	50	59.646	6.701
Secondary	30	51.584	7.143
Major, Chordal	20	49.844	7.255
Major, Solo	20	62.777	1.764
Minor, Chordal	20	50.855	5.798
Minor, Solo	20	63.015	1.481
Major, Primary	25	60.438	5.949
Major, Secondary	15	49.433	7.305
Minor, Primary	25	58.855	7.415
Minor, Secondary	15	53.735	6.513

Notes. Minor = wider dynamic range than Major, but differences not significant
   *Solo = significantly wider range than Chordal.
   *Primary = significantly wider range than Secondary.

Major/Minor Differences in Performance Length (tempo)

   As a measurement of tempo, we determined the number of seconds that each performer used, expressed to hundredths of a second, and then subtracted the minor length from the major length for each performer yielding a total of 40 measurements. Overall, performances ranged in length from 7.24 seconds to 60.01 seconds. The most extreme difference in length between a single major and minor selection was 17.14 seconds. The least difference in length between a single major and minor performance was 0.13 seconds. Results of a single group t-test using performance time as the dependent variable indicated that overall, minor selections were performed slower than major selections (t [1, 39] = 3.0, p <.0047). Table 2 displays the means and standard deviations of length of major and minor selections.

Table 2
Length of Major and Minor Selections (in seconds)

		Mean	*SD*
Overall (*n*=40)	Major	21.805	10.691
	Minor	24.031	8.269
Chordal (*n*=20)	Major	18.802	7.844
	Minor	21.262	7.345
Solo (*n*=20)	Major	24.808	12.414
	Minor	26.800	8.303
Primary (*n*=25)	Major	22.569	12.306
	Minor	25.005	8.606
Secondary (*n*=15)	Major	20.532	7.486
	Minor	22.407	7.681

It should be noted that when major performance lengths were compared with minor performance lengths, minor selections were longer (slower) regardless of whether the results were sorted by chordal/solo or primary/secondary splits. These results appear in Table 2. However, we decided not to compare overall major performances against minor performances as explained earlier. Thus statistical comparisons were computed only on the difference in seconds between each individual's minor performance and major performance. These data appear in Table 3. Using these data, no significant differences were apparent. Using minor performances subtracted from major times as the dependent measure, no significant differences were found between solo and chordal performances (F [1,38]=0.066, p = .7987) or between primary and secondary instrument performances (F [1,38]=0.088, p = .7677).

Table 3
Length of Performances of Major and Minor Selections (in seconds)

	n	Mean	*SD*
Minor-Major	40	2.226	5.694
Chordal	20	2.460	3.814
Solo	20	1.992	7.203
Primary	25	2.435	6.953
Secondary	15	1.876	2.688

Note. No differences were significant.

Of additional interest were the adjectives participants used to describe their performances. Using techniques suggested by Cassidy (1994), adjectives were categorized into Technical (musical) and Descriptive (metaphorical) references as displayed in Table 4.

Table 4
Descriptors Chosen for Major and Minor Selections

Major Selections		Minor Selections	
Technical (Musical) *n*=13	Descriptive (Metaphorical) *n*=69	Technical (Musical) *n*=17	Descriptive (Metaphorical) *n*=64
difficulty level (1)	bouncy (3)	difficulty level (4)	beautiful
tonal description(1)	bright (8)	minor/modal (11)	bleak
meter (1)	cheerful (7)	melodic description (2)	bouncy feeling
major (7)	dance-like (2)		brooding
melodic description (3)	easy going		calm
	exciting		dark (8)
	folk-like (3)		deep
	friendly		dirge-like
	gentle		dramatic
	happy (11)		dreamy
	jolly		folk-like
	joyful (2)		forlorn
	light (3)		gloomy
	lively (3)		introspective
	lyrical		lamenting
	open		lingering
	optimistic		lonely (2)
	peppy		melancholy (3)
	plain		mellow
	playful		moody (3)
	pretty		morose
	relaxed		mournful (3)
	romantic sounding		mysterious (2)
	simple (2)		powerful
	smooth		reflection
	snappy		sad (6)
	stately		serene
	tranquil		serious
	upbeat (5)		simple
	uplifting		slow
	verdant		smooth (2)
			solemn
			somber (3)
			spooky (2)
			strong
			subdued
			thoughtful (2)
			unsettling
			with feeling

Finally we were interested in which performance each participant believed was most expressive. Results were counted and analyzed using the Chi Square statistic. No significant differences appeared. Twenty-two of the 40 participants judged their major performance to be more expressive, while 18 selected minor as their most expressive performance (χ^2 [1, 40] = 0.22, p = 0.639). Likewise, counterbalancing appeared to make little difference, with 21 selecting their second performance (regardless of modality) as their most expressive and 19 selecting their first performance (χ^2 [1, 40] = 0.02, p = 0.8875).

Thus results can be summarized as:

1. Overall, minor selections were performed with significantly wider dynamic ranges. Solo performers and those performing on primary instruments exhibited significantly wider dynamic ranges within individual minor selections than major selections. Analysis by families confirmed that brass, strings, voice and woodwind performers exhibited significantly wider ranges than did pianists.
2. Overall, individuals performed minor selections slower than major selections. However, although minor selections played on primary instruments and chordal instruments were slower than their analogous major selections, differences were not large enough to be statistically significant. Comparison of families yielded no significant differences.
3. Participants selected substantially more descriptive (metaphorical) than technical (musical) adjectives. Adjectives were remarkably similar to those of young children with the happy/sad dichotomy appearing frequently in reference to major/minor.
4. There were no significant differences in participants' individual choices of their "most expressive performance" based on either selection modality or performance order.

Discussion

It appears that musicians indeed are able to perform expressively when given no expressive musical markings and that there are some generalizable similarities in these expressive performances. In this study virtually no performer failed to change expressive qualities based on the two factors (tempo and dynamics to use musical terms, or duration and amplitude changes to use measurement terms) we examined. After listening to the recordings, however, we agreed that there were subtleties in expression that we did not measure. These might include such factors as rubato, ritardando, dynamic changes within small segments, or phrasing. Perhaps the trained ear still remains our best source of measurement for musical artistry. Comparison of data measurement with judges' ratings of expressivity would appear to be a next logical step.

The fact that minor selections were performed slower and with wider dynamic ranges was an interesting finding. It leads to speculation about how and when these trained musicians learned the idea that minor was slower and needed wider dynamic contrasts than major. Alternatively, when and how did these musicians learn that "expressive" means select a slower tempo with wider dynamic levels? Is this indeed a culturally acquired skill (as Morrison and Yeh, 1999 would seem to indicate) or is it a part of the human condition?

It might also be asked whether the minor selections were actually slower? Certainly overall minor performances lasted a greater number of seconds; but perhaps the tempi were similar except for ritardando at the end or within the selections. What is the relationship between tempo and rubato and overall expressivity (Johnson, 1996; 1997; 2003)? Much research remains advisable.

Of particular interest was the area of articulation, an aspect we didn't evaluate in this study. Viewing the graphs produced by the *Adobe Audition* software, we were able to distinguish articulation changes among pianists who appeared to perform their minor selections a bit more legato as compared to major selections. That particular expressive characteristic was more difficult to observe with solo instruments, perhaps because of the inherent legato differences in solo and chordal instruments. It certainly stresses the need for future research in this area.

It appears obvious that familiarity with the instrument was a significant factor in terms of tempo as an expressive medium. The pianists who were not piano majors made frequent comments, prior to and after their performances, concerning their "lack of skill in sightreading." Thus, given the fact that those performing on their secondary instruments showed less difference between major and minor than any other group (Table 3), the task was apparently more about correct notes than expressive playing. Alternatively, it might be speculated that those involved in finding the correct notes could not focus their attention (Geringer & Madsen, 1996; Madsen & Geringer, 1990) on another task such as playing expressively.

Given the research suggesting that dynamics are one of the musical elements to which listeners respond most strongly (Madsen, 1997), we expected there to be definite contrasts in dynamics and were not surprised to find that overall the dynamics of minor performances were significantly larger than major performances. However, the range of dynamic changes between minor pieces and major pieces were not significantly different (Table1); although it should be noted that within each piece the dynamic changes indeed were noticeable. Additionally the range of contrast among those playing solo instruments versus chordal was significantly different. This may be the result of inherent differences between piano and voice/wind instruments. Not unexpectedly those playing their primary instrument exhibited significantly wider ranges of dynamics than those playing their secondary instrument. This finding may be confounded, however, with the fact that all secondary instrument performers were playing piano. Thus the issue of inherent differences in the capabilities of instruments may be a factor in this case and an area of future research.

Of particular interest was the fact that the descriptors these trained musicians selected were so similar to those used by children (Cassidy, 1994; Flowers, 1984; Kostka & Riemer, 1992). The fact that the minor mode selection received verbal labels such as "sad" and "melancholy" was somewhat surprising, because most music majors presumably would have been exposed to fast, robust, or dance-like pieces in minor mode. Likewise, the frequent use of "happy" and "cheerful" for major mode was unexpected from these trained musicians. Most subjects used more non-musical terms than musical, which is consistent with previous research with children (Cassidy, 1994), and indicates, perhaps, that there are more non-musical descriptors available in our language than specific musical ones. Additionally, musicians perhaps may tend to describe music with metaphors and non-musical descriptors when communicating with other musicians or students. It is also possible that current musical notation uses metaphorical words as expressive directions and thus blurs the line between musical and metaphorical categories, leading to speculation about the usefulness of such categorizations.

Generalizations should be made with caution due to the small sample size, the small number of different instruments represented, and the fact that only a limited number of aspects of the complex construct of expressivity were measured. Finally there is consideration of the task of expressive performance itself. How different does a performance have to be in terms of dynamics and tempo changes to be perceived as "expressive?" Perhaps, consistent with Sims (1995) work with young children, because the musicians in the present investigation were

performing instead of listening, they were less capable of demonstrating what they perceived to be expressive differences between the pieces.

What is the role of feedback (aural or verbal) in musicians' expressivity? We asked our participants which of their two performances were the most expressive, but we did not ask how expressive they thought the performances were. Did these musicians perhaps think they were more expressive than our measurement indicated? How much expressive difference is enough? Clearly further research is warranted.

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Edited by
Mary Ellen Cavitt, Texas State University—San Marcos

The Effect of Music Education Major Category on Perceived Vocal Health

Lynette S. Vincent
University of North Texas

Music educators depend on healthy voices to fulfill the responsibilities of their jobs and therefore are classified as professional voice users (Luchsinger & Arnold, 1965; Sataloff, 2001; Stemple, Glaze, & Klaben, 2000). These individuals often need vocal stamina for long periods of time (Mathieson, 2001) and may seek other employment if they experience vocal difficulties or loss of voice (Titze, Lemke, & Montequin, 1997). Voice disorders may have more devastating effects on individuals such as teachers who have greater dependence on their voices for their employment (Aronson, 1990; Stemple, et al., 2000).

A voice disorder is a deviation in vocal quality, pitch, intensity, loudness, or flexibility that "consistently interferes with communication, draws unfavorable attention, adversely affects the speaker or the listener, or is inappropriate to the age" (Nicolosi, Harryman, & Kresheck, 1996, p. 297), gender, cultural background, class, or geographic origin of the individual (Aronson, 1990; Stemple, et al., 2000). Voice disorders are often described in two basic categories—functional and organic (Nicolosi, Harryman, & Kresheck, 1996, Boone & McFarlane, 2000). Functional voice disorders are "related to abuse and misuse", and organic voice disorders are related to disease, pathology, or a change in the structure or function of the vocal mechanism (Boone & McFarlane, 2000, p. 47). Functional vocal abuse and misuse, such as speaking in too low a pitch range, failing to use proper breath support, yelling, or excessive throat clearing, may lead to organic pathology of the vocal folds, such as nodules or polyps (Boone & McFarlane, 2000; Stemple, et al., 2000). Boone and McFarlane (2000) suggested that most voice disorders are functional and respond well to treatment with voice therapy. Research has acknowledged professions that exhibit high rates of voice disorders.

Investigations of the relationship between occupation and voice disorders have identified teachers in general as a high-risk group. Titze, Lemke, and Montequin (1997) found that teachers accounted for 4.2% of the workforce and a disproportionate amount (about 20%) of the patients seen for voice disorders. Studies have also found that teachers exhibited a high risk of vocal difficulties when compared with other occupations and reported voice disorders at a higher rate than individuals in other occupations (Morton & Watson, 1998; Smith, Gray, Kirchner, & Heras, 1997; Smith, Lemke, Taylor, Kirchner, & Hoffman, 1998). In addition to exhibiting a great risk for vocal problems, many teachers sensed that vocal problems affected their productivity.

Teachers were more likely than individuals in other professions to perceive that voice disorders had an adverse effect on their job performance. Twenty percent of teachers reported missing work due to vocal problems, while only four percent of other professions reported voice-related absenteeism (Smith, Gray, et al., 1997; Smith, Lemke, et al., 1998). A survey of teachers in Texas, Washington, and Illinois (Sapir, Keidar, & Mathers-Schmidt, 1993) found that teachers with symptoms of vocal attrition reported that voice difficulties impaired their teaching ability and that they had voice-related absenteeism. Similar findings by Russell, Oates, and Greenwood (1998) reported that 22% of Australian teachers who responded to a questionnaire experienced regular voice problems that interfered with job performance. Knowledge of the symptoms that teachers often reported may facilitate understanding of why teachers perceived a relationship between vocal problems and job performance.

Studies have considered the vocal symptoms that teachers report. Hoarseness, fatigue, and a lower speaking pitch were frequently reported vocal symptoms among teachers (Gotaas & Starr, 1993; Smith, Kirchner, et al., 1998). Over 50% of teachers surveyed in Texas, Washington, and Illinois reported having more than one symptom of vocal attrition (Sapir, et al., 1993), and Gotaas and Starr (1993) reported that 80% of 250 teachers experienced vocal fatigue. Morton and Watson (1998) observed that a higher percentage of teachers experienced voice loss with cold/allergy, fatigue, sore throat, and dryness than individuals in other professions. Researchers have observed teachers' vocal difficulties but have not yet been able to determine why many teachers exhibit vocal difficulties (Smith, Kirchner, et al., 1998).

Although scientific research has not yet identified risk factors that predispose teachers to vocal problems, researchers have made informed suppositions concerning work-related risk factors. Extended voice use, frequent voice use over background noise, frequent exposure to children with upper respiratory infections (Smith, Gray, et al., 1997), talking to large classes, work-related stress, illness, pour acoustics, chalk dust and heating (Morton & Watson, 1998) were factors that supposedly impacted teachers' voices. Gotaas and Starr (1993) found that professional activities contributed to the development of fatigue but that fatigue could not be attributed only to speaking for extended periods or to loud talking. Vocally demanding extra-curricular activities, speaking in tense situations, and psychological factors may have also contributed to vocal fatigue. Psychological factors possibly contributed to vocal fatigue because teachers who experienced anxiety in tense situations may have made vocal adjustments that resulted in fatigue. Although studies have determined that teachers in general exhibit higher risk for vocal difficulties, the findings of these studies concerning the vocal problems of music teachers were less conclusive.

The majority of research that has been conducted concerning vocal health issues of teachers was conducted on teachers in general and had contradictory findings concerning music teachers. A Swedish study found that music teachers were "eight times more common among phoniatric patients than among Swedes in general" (Fritzell, 1996, p. 10), while Smith, Kirchner, et al. (1998) found that music teachers were not more likely than other teachers to report vocal problems. While several studies have considered the vocal problems of teachers in general, few studies have considered music teachers specifically.

While many studies have considered the vocal problems of teachers in general (Chan, 1994; Gillivan-Murphy, Drinnan, O'Dwyer, Ridha, & Carding, 2005; Gotaas & Starr, 1993; Jónsdottir, Laukkanen, & Siikki, 2003; Jónsdottir, Rantala, Laukkanen, & Vilkman, 2001; Mattiske, Oates, & Greenwood, 1998; Morton & Watson, 1998; Rantala, Määtä, & Vilkman,1997; Rantala, Paavola, Körkkö, & Vilkman, 1998; Rantala, & Vilkman, 1999; Rantala, Vilkman, & Bloigu, 2002; Roy, et al., 2002; Russell, et al., 1998; Sapir, et al., 1993; Smith, Gray, et al., 1997; Smith,

Kirchner, et al., 1998; Smith, Lemke, et al., 1998; Yiu, 2002), fewer studies have considered music teachers specifically (Askren, 2001; Bernstorf, 1993; Bernstorf & Burk, 1996; Fritzell, 1996; Hackworth, 2003; Morrissey, 2004; Solberg & Duax, 2000; Zmijak, 1999). Searches of databases for vocal health science and for music education referenced studies related to teachers in training (Simberg, Laine, Sala, & Rönnemaa, 2000; Simberg, Sala, Laine, & Rönnemaa, 2001; Simberg, Sala, & Rönnemaa, 2004) but referenced no studies that focused specifically on the vocal health of undergraduate music educators.

Self-reporting measures, such as surveys, have been accepted as appropriate means to measure the perceived impact of a health problem (Deary, Webb, Mackenzie, Wilson, & Carding, 2004; Rosen & Murry, 2000; Rosen, Murry, Zinn, Zullo, & Songolian, 2000; Wheeler, Collins, & Sapienza, 2006). Validity and reliability have been established for the Voice Handicap Index and the Voice Related Quality of Life survey (Jacobson, et al., 1997; Hogikyan, & Rosen, 2002; Hogikyan, & Sethuraman, 1999); however, these measures would not be appropriate for individuals who do not have vocal problems because they refer specifically to vocal problems. Based on these past studies, the use of a self-reporting measure based on previously validated instruments that does not refer to vocal problems to measure the perceived vocal health of undergraduate music educators would be a useful contribution to research in the field of music education.

The purposes of this study were 1) to describe music education majors' perceived vocal health, and 2) to determine if there were differences between groups (instrumental or vocal music education majors) on perceived vocal health.

Method

Sample

The questionnaire was completed by 79 undergraduates in music education at a large southwestern university. Participants either completed the questionnaire in an undergraduate music education class or in a choir rehearsal. The participants were grouped according to a focus on instrumental ($n = 51$) or vocal ($n = 28$) music education. The study participants were 45 males and 34 females. The instrumental group included more males ($n = 32$) than females ($n = 19$), and the vocal group had a fairly equal number of participants from both genders (female, $n = 15$; male, $n = 13$). The questionnaires of two instrumental majors were not included in the data analysis because one was an outlier and one did not complete 13 questions of the questionnaire. All other participants completed the entire questionnaire.

Measurement Instrument

The final version of the questionnaire contained 37 items. The researcher-developed questionnaire was a self-reporting measure based on a five-point Likert scale, and the answers were summed for an overall score with a higher score indicating a greater perception of vocal difficulty. Possible scores ranged from 0, indicating no perceived vocal difficulty, to 180, indicating a high perception of vocal difficulty. The measurement instrument for this study was based on instruments that have established validity and reliability, the Voice Handicap Index (Jacobson, et al., 1997) and the Voice Related Quality of Life survey (Hogikyan & Sethuraman, 1999). These instruments were developed for use with voice-disordered individuals and mention voice disorders in questionnaire items; however, the questionnaire for the current study was

intended for use with individuals who may or may not have had vocal problems and did not refer specifically to vocal problems.

Validity and Reliability

Content validity was established by a panel of three experts, a Ph.D. professor in speech language pathology, a voice professor with a Ph.D. in voice science, and an undergraduate music education major. The version of the questionnaire that was sent to the content validity panel contained 47 questions. Based on comments from the content validity panel, four questions were deleted because of redundancy, four questions were deleted because they did not strongly address perceived vocal health, six questions were slightly reworded, and the order of questions was adjusted. The updated 39-item version of the questionnaire was then field tested with undergraduate music education majors.

The questionnaire was field tested with four undergraduate music education majors from the same university as the study participants. Based on the field test, two questions were deleted from the questionnaire because of clarity, and four questions were slightly restated for understanding. For example, the adjective "speaking" was added to item 21, "My speaking voice sounds worse at the end of the day." After making the slight edits to the questionnaire indicated by the field test, the 37-item version of the questionnaire was administered to undergraduate music education majors ($n = 79$) in the main study. Approximately 15 minutes were needed to complete the consent form, demographic data form, and questionnaire.

Results

Internal consistency reliability analysis of the 37-question questionnaire indicated that the content was homogeneous ($r = 0.8917$). One question (question 5) was loaded negatively, the internal consistency reliability, however, increased only slightly when this question was removed ($r = 0.8977$). Therefore, all 37 questionnaire items were used in the calculation of the ANOVA.

The general linear model was used to analyze the completed questionnaires. The initial data set did not meet the normality assumption in the instrumental group. An outlier was removed from the instrumental group, and the normality assumption was satisfied. The homogeneity assumption was calculated using Levene's statistic (L = .320, $p = .573$), and the assumption was met.

Means were calculated for the overall group ($M = 31.18$, $SD = 11.23$), the instrumental group ($M = 29.22$, $SD = 10.87$), and the vocal group ($M = 34.61$, $SD = 11.28$). Scores ranged from 5 to 55. The question with the highest mean score for the overall group ($M = 2.56$, $SD = .82$), the instrumental group ($M = 2.59$, $SD = .91$), and the vocal group ($M = 2.50$, $SD = .64$) was question five, "I talk over background noise in loud restaurants or public places." The vocal group also scored high on question 22 ($M = 2.25$, $SD = 1.04$), "My voice quality is significantly worse when I first wake up," and question 37 ($M = 2.14$, $SD = .89$), "I feel that I need to clear my throat." Table 1 contains the group and overall means for all questionnaire items.

The question with the lowest mean score for the overall group ($M = .19$, $SD = .46$) and the vocal group ($M = .32$, $SD = .55$) was question 34, "I take over-the-counter pain killers for my voice." The questions with the lowest mean scores for the instrumental group were question 14 ($M = .10$, $SD = .37$), "I avoid talking on the telephone because of my voice," and question 30 ($M = .10$, $SD = .37$), "I have considered changing my future profession because of my voice."

Table 1
Means and Standard Deviations for Individual Questions

Question	Vocal M	SD	Instrumental M	SD	Overall M	SD
1. My speaking voice is hard to hear or understand.	0.786	0.686	1.184	0.834	1.039	0.802
2. Other people comment that my speaking voice is hard to hear or understand.	0.927	0.766	0.980	0.901	0.961	0.850
3. People have difficulty hearing me in noisy settings.	1.250	0.928	1.490	0.844	1.403	0.877
4. I am able to use my speaking voice as much as I would like.	0.714	0.659	0.490	0.681	0.571	0.677
5. I talk over background noise in loud restaurants and public places.	2.500	0.638	2.592	0.911	2.56	0.819
6. It is difficult for me to talk over background noise in loud restaurants or public places.	1.250	0.887	1.327	0.774	1.299	0.812
7. People have difficulty hearing me from a distance.	1.179	0.723	1.429	0.791	1.338	0.771
8. People ask me to repeat myself.	1.321	0.670	1.510	0.794	1.442	0.752
9. I cannot speak loudly for a prolonged time.	1.607	0.875	1.122	0.857	1.442	0.752
10. After speaking loudly for a prolonged time, my voice is hoarse.	1.750	0.585	1.490	0.794	1.584	0.731
11. It is difficult for me to speak softly.	0.500	0.638	0.531	0.793	0.520	0.736
12. My voice feels scratchy.	1.321	0.723	0.980	0.750	1.104	0.754
13. My voice prevents me from social conversations.	0.393	0.497	0.184	0.391	0.260	0.441
14. I avoid talking on the telephone because of my voice.	0.357	0.678	0.102	0.368	0.195	0.514
15. My voice quality is consistent throughout the day.	1.143	0.705	1.041	0.889	1.078	0.823
16. My voice sounds rough.	0.929	0.716	0.898	0.685	0.909	0.692
17. My throat feels dry.	1.893	0.567	1.490	0.617	1.636	0.626
18. I run out of air when I talk.	0.786	0.787	1.061	0.827	0.961	0.818
19. I take many breaths when speaking.	0.893	0.685	1.225	0.896	1.104	0.836
20. I am happy with my speaking voice.	0.679	0.612	0.918	0.909	0.831	0.818
21. My speaking voice sounds worse at the end of the day.	1.071	0.813	0.633	0.727	0.792	0.784
22. My voice quality is significantly worse when I first wake up.	2.250	1.041	1.796	0.935	1.961	0.993
23. My speaking voice gives out on me.	0.643	0.678	0.449	0.580	0.520	0.620
24. I lose my voice.	0.786	0.738	0.510	0.617	0.610	0.672
25. I feel discomfort in my throat when speaking.	0.893	0.685	0.551	0.647	0.675	0.677
26. My throat feels painful when I am speaking.	0.643	0.488	0.367	0.528	0.468	0.528
27. My throat feels painful after speaking for a prolonged time.	0.964	0.793	0.653	0.694	0.766	0.742
28. My speaking voice affects my participation in class.	0.393	0.629	0.286	0.577	0.325	0.595
29. I have considered changing my major because of my voice.	0.357	0.731	0.122	0.389	0.208	0.546
30. I have considered changing my future profession because of my voice.	0.393	0.737	0.102	0.368	0.208	0.546
31. I am able to use my speaking voice easily for prolonged periods of time.	0.893	0.875	0.837	0.921	0.857	0.899
32. I take over-the-counter lozenges for my voice.	1.393	0.786	0.470	0.710	0.805	0.859
33. I use over-the-counter throat sprays for my voice.	0.750	0.844	0.347	0.597	0.494	0.719
34. I take over-the-counter pain killers for my voice.	0.321	0.548	0.122	0.389	0.195	0.460
35. My speaking voice frustrates me.	0.429	0.504	0.449	0.709	0.442	0.639
36. It is tiring to speak.	0.607	0.737	0.429	0.707	0.494	0.719
37. I feel that I need to clear my throat.	2.143	0.891	1.653	0.830	1.831	0.880

The instrumental and vocal groups had similar mean scores for questions 5, 11, 31, and 35. The vocal and instrumental group had high mean scores (vocal, $M = 2.50$, $SD = .64$; instrumental, $M = 2.59$, $SD = .91$) for question five, "I talk over background noise in loud restaurants or public places." Both groups had similar scores for question 31 (vocal, $M = .89$, $SD = .88$; instrumental, $M = .84$, $SD = .92$), "I am able to use my speaking voice easily for prolonged periods of time." The vocal and instrumental group had low mean scores for question 11 (vocal, $M = .50$, $SD = .64$; instrumental, $M = .53$, $SD = .79$), "It is difficult for me to speak softly," and question 35 (vocal, $M = .43$, $SD = .50$; instrumental, $M = .45$, $SD = .71$), "My speaking voice frustrates me."

The instrumental group had a mean score that was at least .3 points higher than the vocal group on question 1 and question 19. The instrumental group mean score ($M = 1.18$, $SD = .83$) was higher than the vocal group mean score ($M = .79$, $SD = .69$) for question one, "My speaking voice is hard to hear or understand." The instrumental group mean score ($M = 1.22$, $SD = .90$) was also higher than the vocal group mean score ($M = .89$, $SD = .69$) for question 19, "I take many breaths when speaking."

The vocal group had a mean score that was at least .4 points higher than the instrumental group on questions 9, 17, 21, 22, 32, 33, and 37. The vocal group mean score was higher than the instrumental group mean score for question nine (vocal, $M = 1.61$, $SD = .88$; instrumental, $M = 1.12$, $SD = .86$), "I cannot speak loudly for a prolonged time," question 17 (vocal, $M = 1.89$, $SD = .57$; instrumental, $M = 1.49$, $SD = .62$), "My throat feels dry," question 21 (vocal, $M = 1.07$, $SD = .81$; instrumental, $M = .63$, $SD = .73$), "My speaking voice sounds worse at the end of the day," question 22 (vocal, $M = 2.25$, $SD = 1.04$; instrumental, $M = .35$, $SD = .60$), "My voice quality is significantly worse when I first wake up," question 33 (vocal, $M = .75$, $SD = .84$; instrumental, $M = .35$, $SD = .60$), "I use over-the-counter throat sprays for my voice," and question 37 (vocal, $M = 2.14$, $SD = .89$; instrumental, $M = 1.65$, $SD = .83$), "I feel that I need to clear my throat." Question 32, "I take over-the-counter lozenges for my voice," had the greatest difference between the vocal group mean score and the instrumental group mean score. The vocal group mean score ($M = 1.39$, $SD = .79$) was .92 points higher than the instrumental group mean score ($M = .47$, $SD = .71$) for question 32.

There was a significant main effect for group, $F (1, 75) = 4.252$, $p = .043$, for the summed questionnaire scores by group favoring the vocal group. Partial eta squared ($n_p^2 = .054$) was close to the normal limits for a medium effect size (Huck, 2000). The higher mean for the vocal group indicated that they perceived greater vocal difficulties than the instrumental group.

Discussion

The group means for the entire questionnaire suggest that vocal participants perceived greater vocal difficulties than the instrumental participants. The group means for individual questions may indicate the vocal problems perceived by participants in either group. The similar high group means for question five, "I talk over background noise in loud restaurants and public places," may suggest that vocal and instrumental participants raise the intensity of their speech to increase the volume level. The vocal folds remain adducted (closed) longer and subglottal pressure is increased when speaking with greater intensity (Boone & McFarlane, 2000). When individuals speak with greater intensity for longer periods of time, their vocal folds may become inflamed because of the longer closed phase of the vocal folds and the increased subglottal pressure (Sapienza, Crandell, & Curtis, 1999). Music education programs may wish to inform

undergraduate music education majors about the risk of talking over background noise and possible strategies to avoid this behavior.

The low mean scores of the instrumental group for question 14, "I avoid talking on the telephone because of my voice," and question 30, "I have considered changing my future profession because of my voice," suggests that participants in the instrumental group did not perceive vocal difficulties that would prevent them from normal voice use in telephone conversations or in their future careers. The vocal and instrumental groups had similar low mean scores on question 31, "I am able to use my speaking voice easily for prolonged periods of time." The low mean scores of the instrumental group for questions 14 and 30 and of both groups on question 31 may suggest that participants did not perceive problems with their voices that would interfere with normal speech. However, the undergraduate music education majors in the current study may not have had enough teaching experience to exhibit teaching-related vocal problems such as those mentioned in research literature (Morton & Watson, 1998; Smith, Gray, et al., 1997; Smith, Lemke, et al., 1998).

Question 22, "My voice quality is significantly worse when I first wake up," and question 37, "I feel that I need to clear my throat," may be related to symptoms of gastroesophageal reflux disease (GERD). The high mean scores of the vocal group on questions 22 and 37 may indicate that participants in the vocal group were experiencing symptoms of GERD. Heartburn, chronic cough, hoarseness, throat clearing, chest pain (Stemple, et al., 2000), and "poor voice quality in the morning" (Boone & McFarlane, 2000) are possible symptoms of GERD. GERD is a concern when considering vocal health because GERD may cause contact ulcers and granulomas on the vocal folds (Boone & McFarlane, 2000) as well as difficulty with high notes or a decreased frequency range (Stemple, et al., 2000).

The high mean scores for both groups on question five may suggest that the participants were frequently in situations that require the use of greater vocal intensity and volume. The low mean scores for both groups on question 11, "It is difficult for me to speak softly," may suggest that neither group perceived difficulty speaking softly. Individuals with vocal problems that cause them to speak with hyperfunction may speak at inappropriately loud volume levels; therefore, the participants' perceived ease of speaking softly may indicate that they were not experiencing vocal problems related to hyperfunction (Boone & MacFarlane, 2000).

The low mean scores for both groups on question 35, "My speaking voice frustrates me," may indicate that participants from both groups had a healthy outlook concerning their speaking voices and were not experiencing vocal problems that would cause them frustration. However, because the participants in the study were not exposed to the level of voice use required by a regular teaching schedule, they may have been less likely than in-service teachers to experience vocal difficulties. Therefore, the undergraduate music education majors in the current study may not have been as predisposed to exhibit vocal problems that may cause frustration among teachers (Morton & Watson, 1998; Smith, Gray, et al., 1997; Smith, Lemke, et al., 1998).

The instrumental group scored slightly higher than the vocal group on a question related to the clarity of their speaking voice and on a question related to breathiness. The instrumental group had a higher mean score on question 1, "My speaking voice is hard to hear or understand," and question 19, "I take many breaths when speaking." Breathiness may be caused by loose approximation of the vocal folds that allows excess air to escape. Breathiness may also occur after a long period of effortful speaking, such as at the end of a teaching day (Boone & MacFarlane, 2000). These questions may be related because breathiness may adversely impact vocal clarity.

The vocal group reported greater vocal difficulty than the instrumental group on questions that may be related to GERD, vocal fatigue, and hydration. The responses of the vocal group on questions 22 and 37 may indicate that the vocal group perceived stronger symptoms of GERD than the instrumental group. Question 9, "I cannot speak loudly for a prolonged time," and question 21, "My speaking voice sounds worse at the end of the day," may be related to vocal fatigue (Stemple, et al., 2000). The high mean scores of the vocal group on questions 9 and 21 may indicate that participants in the vocal group perceived more vocal fatigue than participants in the instrumental group. The high mean scores of the vocal group on question 32, "I take over-the-counter lozenges for my voice," and question 33, "I use over-the-counter throat sprays for my voice," may imply that the vocal participants were attempting to increase mucus secretion and help remedy dry mouth and throat that may be related to inadequate hydration. Similarly, the high mean score of the vocal group on question 17, "My throat feels dry," may indicate that the vocal participants were not adequately hydrated. Stemple, Glaze, and Klaben (2000) explained, "Hydration is extremely important for optimal mucosal wave vibration and performance of the entire laryngeal system" (p. 416).

There may be several reasons why the vocal group perceived greater vocal difficulties than the instrumental group. The vocal group had higher mean scores on questions that may be related to GERD, vocal fatigue, and hydration, and the mean scores on these questions may indicate the vocal difficulties that the vocal group experienced. GERD may be of particular difficulty to vocalists because GERD may predispose individuals to contact ulcers, granulomas (Boone & McFarlane, 2000), loss of range, and difficulty with high notes (Stemple, Glaze, & Klaben, 2000). The amount of voice use of vocal music education majors may have predisposed them to overuse and vocal fatigue, a vocal symptom that was frequently reported by in-service teachers (Gotaas & Starr, 1993; Smith, Kirchner, et al., 1998). Participants in the vocal group may have engaged in more demanding vocal activities than the instrumental group as evidenced by the fact that all participants in the vocal group sang in a choir and had taken voice lessons. Music education programs may wish to address the risk that vocal music education undergraduates may have for vocal fatigue and dehydration through vocal health training. The vocal music education majors may have been more sensitive to their perceived vocal health because of the increased use of their voices in their degree plans.

More research is needed that considers the vocal health of undergraduate music education majors. Factors that impact the vocal health of music education student teachers and possible approaches to promote healthy voice use for music education majors should be a focus of future research. The development of a standardized questionnaire to measure the perceived vocal health of undergraduate music majors would be a beneficial addition to the field of music education. Studies that compare the perceived vocal health of general education majors and music education majors also may be informative.

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