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**The Use of Functional Piano Skills by Selected Professional Musicians  
and Its Implications for Group Piano Curricula**

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**The Use of Functional Piano Skills by Selected Professional Musicians  
and Its Implications for Group Piano Curricula**

**by**

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## **Dedication**

I would like to dedicate this dissertation to my husband, who has always supported me in all of my endeavors. Thank you so much for your constant love and encouragement.

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# **The Use of Functional Piano Skills by Selected Professional Musicians and Its Implications for Group Piano Curricula**

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The purpose of this study was to gather information about professional musicians' development and use of functional piano skills in their careers. An online questionnaire was distributed to ( $N = 393$ ) faculty members, professional performers, and private music instructors from different regions and institutions. The survey gathered information about their careers, piano training, use of functional piano skills, and proposals for the piano training of undergraduate music majors in their field. In total, 109 musicians completed the study: faculty members ( $n = 43$ ), performers ( $n = 38$ ), and teachers ( $n = 28$ ).

The results of this study showed that faculty members, performers and teachers generally performed similar musical activities, had comparable piano training, used similar piano skills, and agreed with each other about their suggestions for undergraduate piano training. There were, however, subtle differences among the three groups in the frequency with which they used functional piano skills.

Professional musicians regularly transposed melodies, sight-read accompaniments, and played scales. They never improvised accompaniments, practiced

and memorized piano solos, devised modulations, composed, and accompanied groups. In addition to the three skills that all professional musicians used, faculty members also played by ear, played chord progressions, and accompanied soloists regularly, performers regularly transposed accompaniments, harmonized melodies, and accompanied soloists, and teachers read open scores and transposed accompaniments frequently.

Generally, professional musicians thought that piano skills were important to their careers, and many would have liked additional training on accompanying. Although most piano skills were learned outside of collegiate piano classes, participants in this study, regardless of the frequency with which they used these skills, thought that music majors should receive piano training on five skills: playing chord progressions, playing scales, sight-reading, harmonizing melodies, and reading open scores. Many participants indicated that practicing and memorizing piano solos were skills that should receive little training in collegiate piano classes.

It is suggested that creating a group piano curriculum that effectively develops the functional piano skills valued and used by professional musicians becomes a priority for group piano teachers and researchers working on the preparation of professional musicians.

## Table of Contents

List of Tables .....	x
Chapter 1 Introduction .....	1
Statement of the Problem.....	3
Statement of Purpose .....	4
Chapter 2 Review of Literature .....	6
Historical Overview .....	6
Group Piano Organization and Texts.....	15
Group Piano Teachers .....	22
Functional Piano Skills .....	28
The Importance of Functional Piano Skills: Group Piano Teachers.....	37
The Use and Importance of Functional Piano Skills to School Music Educators.....	42
Music Careers .....	48
Purpose of the Study .....	49
Chapter 3 Methodology .....	50
Questionnaire .....	50
Pilot Study.....	51
Main Study: Participants and Procedures .....	51
Survey Returns.....	54
Chapter 4 Results .....	56
Cross Tabulations.....	80
Spearman Correlations.....	103
Chapter 5 Discussion .....	108
Limitations of the Study and Recommendations for Further Research.....	121
Conclusions and Implications .....	123



Appendix A. Online Survey .....	126
Appendix B. Cover Letter .....	135
Appendix C. Follow-up Letter .....	136
Appendix D. Participants' Comments to Question 18 .....	137
Appendix E. Participants' Comments to Question 19 .....	143
References.....	147
Vita .....	160

## **List of Tables**

Table 1:	Descriptive Information of Universities and Colleges Surveyed .....	52
Table 2:	Descriptive Information of Music Faculty Members.....	53
Table 3:	Descriptive Information of Performers .....	53
Table 4:	Descriptive Information of Private Music Teachers .....	53
Table 5:	Proportion of Male and Female Music Faculty, Performers, and Teachers .....	56
Table 6:	Degrees Earned by Music Faculty, Performers, and Teachers .....	57
Table 7:	Degree Programs Completed by Music Faculty, Performers, and Teachers .....	58
Table 8:	Means and Standard Deviations for Years of Experience of Faculty, Performers, and Teachers.....	59
Table 9:	Activities Performed Regularly by Faculty, Performers, and Teachers .....	60
Table 10:	Teaching Responsibilities of Faculty, Performers, and Teachers .....	61
Table 11:	Proficiency Requirements for Faculty, Performers, and Teachers ...	62
Table 12:	Degree Programs in Which Faculty, Performers, and Teachers had Proficiency Requirements .....	62
Table 13:	Years of Individual and Group Piano Lessons Received by Faculty, Performers, and Teachers Prior to College .....	63
Table 14:	Means and Standard Deviations for Semesters Spent in Piano Lessons and Group Piano Classes for Faculty, Performers, and Teachers During College .....	64

Table 15a:	Percentage of Participants Who Learned Piano Skills in Lessons, Group Piano Class (GP), Other Classes (OC), or Never Taught .....	65
Table 15b:	Proportion of Faculty, Performers, and Teachers Who Learned Piano Skills in Lessons, Group Piano Classes (GP), Other Classes (OC), or Never Taught (NT) .....	66
Table 16a:	Frequency With Which Participants Used Functional Piano Skills..	68
Table 16b:	Frequency With Which Faculty, Performers, and Teachers Used Functional Piano Skills .....	69
Table 17a:	Adequacy of Participants' Collegiate Piano Training on Functional Piano Skills .....	71
Table 17b:	Adequacy of Faculty Members', Performers', and Teachers' Collegiate Piano Training on Functional Piano Skills .....	72
Table 18:	Proportion of Faculty, Performers, and Teachers Who Would Use the Piano More if They Were More Proficient .....	73
Table 19:	Importance of Functional Piano Skills to Faculty, Performers, and Teachers .....	74
Table 20a:	Participants' Proposed Piano Skill Training for Undergraduates.....	76
Table 20b:	Faculty Members', Performers', and Teachers' Proposed Piano Skill Training for Undergraduates.....	77
Table 21:	Faculty Members', Performers', and Teachers' Proposed Placement of Undergraduate Piano Training.....	78
Table 22:	Faculty Members', Performers', and Teachers' Proposed Length of Study for Undergraduate Piano Training .....	79
Table 23:	Participants' Frequency of Use and Importance Rating of Selected Piano Skills .....	81

Table 24:	Faculty Members' Frequency of Use and Importance Rating of Selected Piano Skills .....	85
Table 25:	Performers' Frequency of Use and Importance Rating of Selected Piano Skills .....	88
Table 26:	Teachers' Frequency of Use and Importance Rating of Selected Piano Skills .....	91
Table 27:	Participants' Frequency of Use and Proposed Undergraduate Training on Selected Piano Skills.....	95
Table 28:	Faculty Members' Frequency of Use and Proposed Undergraduate Training on Selected Piano Skills.....	98
Table 29:	Performers' Frequency of Use and Proposed Undergraduate Training on Selected Piano Skills.....	100
Table 30:	Teachers' Frequency of Use and Proposed Undergraduate Training on Selected Piano Skills.....	102

## I. Introduction

Since 1815, group piano classes have been used in private music schools, individual piano studios, recreational music-making programs, and universities and colleges to provide multiple students with experience at the piano (Richards, 1962; Tsai, 2007). In fact,

In college piano classes, preparatory departments, and many private studios, teachers are increasingly turning to group and class work as a more efficient way to use their time, and students are benefiting from the stimulation and the unique opportunities for learning which a group offers.... Musical skills develop rapidly in a group, not only because of the longer lesson time, but also because it is usually more enjoyable and absorbing to sight read or improvise with others than alone. (Shockley, 1982, p. 107-108)

Of all of the settings in which group piano classes can take place, university-level group piano courses are most common (Tsai, 2007). Now ubiquitous in universities and colleges in the United States, group piano courses for music majors are charged with developing the functional piano skills that undergraduate music students will use in their intended careers (Chin, 2002). But, what are the piano skills that undergraduate music majors may need in the future? Which piano skills do professional musicians use in their careers? Do all professional musicians use the same piano skills? How do group piano courses contribute to university music majors' professional training? The purpose of the present document is to gather information about the piano skills that professional musicians use in their careers.

There's a great variety of career paths that music majors can select after the completion of their studies.. Mathaug (2004) said:

The concept of career development is especially difficult for music students because the course of a musician's life is so uncertain. For students majoring in a profession like law or medicine, the future is considerably more focused.... For musicians, there are few certain paths. (p. 67)

Some of the more common careers in music include school music teachers, university faculty members, professional performers, and private music teachers (Mathaug, 2004). Of course, there are many other careers that music majors can pursue upon graduating, such as music therapists, music librarians, or sound technicians, to name a few.

Ultimately, the training that music majors receive during college is designed to prepare them for their intended careers. Most university music students take music theory, music history, aural skills/ear training, applied lessons on their primary instrument, and group piano classes. These classes typically provide the same instruction regardless of students' degrees; students do not receive specialized instruction in music theory or class piano designed to meet the needs of their intended careers. There are, however, a few courses that university music majors take that are designed specifically for their degree programs; for instance, music education majors take a series of methods courses and student teaching, whereas performance majors take classes regarding the performance practices of musical eras and repertoire. These specialized courses provide music majors with opportunities to practice the skills that they will use in the future.

Typically, the group piano that most music majors take during their studies provide instruction on skills, such as sight-reading, harmonizing, improvising, playing repertoire pieces, and transposing (Chin, 2002). Are these skills that students will use in their future career? Are these the skills that professional musicians use in their positions?

A number of studies have examined how school music teachers use the piano in their career (Buchanan, 1964; Christensen, 2000; Freeburne, 1952; Graff, 1985; March, 1988; McWhirter, 2006). Most school music teachers use the piano daily to warm-up their ensembles, harmonize melodies, sight-read accompaniments, accompany their ensembles, transpose instruments to concert pitch, and improvise using letter symbols (Christensen, 2000; McWhirter, 2006). Although much is known about the piano skills

that school music teachers use, there has been no research investigating the piano skills that other professional musicians use in their careers. Do orchestra musicians or private music teachers, for example, use functional piano skills? Where do they acquire the skills they use?

It is important to define the term functional piano skills, as I will refer to these skills often in the present document. Researchers have used a number of different definitions for the term functional piano skills, but for the purposes of this document, functional piano skills are those that allow a musician to use the piano as a tool to enhance other types of musical learning. For example, sight-reading, open score reading, harmonizing with letter symbols, harmonizing with roman numerals, harmonizing without symbols, playing by ear, improvising accompaniments, improvising melodies, playing chord progressions, reading alto and tenor clefs, transposing accompaniments, transposing melodies, transposing instruments to concert pitch, playing scales, accompanying soloists, and accompanying ensembles are functional piano skills.

### **STATEMENT OF THE PROBLEM**

Many music majors who take class piano in college wonder why they are required to take group piano courses. In their view, the information and skills they learn in group piano classes will not contribute to their professional training (Young, 2009). Some music majors have asked how they will use functional piano skills in their careers as performers, faculty members, and private music teachers (Young, 2009). Providing university music students with evidence that professional musicians use functional piano skills could positively affect their attitudes towards group piano classes. Maris (2000) asked faculty members to “compile and share information so that students can understand in what ways and to what levels of accomplishment they will need to grow in order to be prepared to be considered for various professional opportunities and to accomplish

specific professional tasks” (p. 15). For group piano teachers, this means collecting information about how professional musicians use the piano, including the functional piano skills they use regularly and how important they think piano skills are to their jobs.

University music students throughout the United States are required to take group piano classes, and the expectation is that upon finishing their piano requirement they could use the piano in their future careers (Chin, 2002). However, no information is available on the types of piano skills needed by most professional musicians. Numerous studies have been completed with school music educators about the piano skills they use most often and how they value the ability to play the piano. However, teaching music in public schools is only one of the many career paths that music majors may take upon completing their degrees. Do professional musicians, such as music faculty members, professional performers, or private music teachers, use piano skills? Are these skills different than those of school music teachers? How often do they use functional piano skills? The present study investigated some of these questions.

### **STATEMENT OF PURPOSE**

The purpose of this study was to gather information about the piano skills used by professional musicians. I sought to answer the following questions about professional musicians’ piano skill acquisition and use:

1. What functional piano skills do they use most frequently?
2. How adequate was the training they received during college on those piano skills?
3. In which courses did they learn those piano skills?
4. How much piano training did they receive during college? Before college?
5. What are their recommendations for undergraduate music majors’ piano training?



The answers to these questions will provide group piano teachers and university music majors with information about how the piano skills learned in group piano classes can be applied to their future careers. In current study, most faculty members, performers, and private music teachers regularly sight-read accompaniments, transposed melodies, and played scales. Faculty members also played four-part chord progressions, played by ear, and accompanied soloists, whereas performers regularly accompanied soloists and transposed accompanists, and teachers transposed accompaniments and read open scores regularly. Most professional musicians thought the ability to play the piano was important to their jobs and thought that undergraduates should receive training on functional piano skills.

The information gathered in this study may benefit university music students. If undergraduate music majors understand how the piano skills they learn in group piano classes can be used in the future, then their attitudes regarding group piano classes may become more positive. Also, if group piano teachers had information about the piano skills that professional musicians use, they may emphasize these skills in their teaching.

## II. Review of Literature

This chapter provides a summary of the research literature on the history and organization of group piano programs. First, I will present an overview of the development of group piano classes from their inception in 1815, through their introduction into colleges and universities throughout the United States to their current place in the undergraduate music major curriculum. Following the historical survey, I will discuss selected research on group piano curricula, organization, and functional skill development. The last section of this chapter summarizes the survey research describing the use and value of functional piano skills to both group piano teachers and school music educators.

### **HISTORICAL OVERVIEW**

Group piano classes originated in Europe during the early 19<sup>th</sup> century (Richards, 1962). Johann Bernhard Logier was the first piano teacher to offer piano classes, which he offered to all students regardless of their technical abilities. Logier's group piano classes had between 10 and 30 students, but the classroom where they took place only held between 8 and 12 acoustic pianos. Logier arranged the class so that students of similar ability levels sat near each other and worked together at one piano.

One visitor to Logier's school wrote a detailed account of this new format of music instruction, both critiquing and describing how these classes were conducted.

While the beginner plays the simple melody, those farther advanced practice at the same time, more or less different variations. One would suppose that confusion would be sure to ensue; however, those pupils who play the same study are placed together, you hear, as you pass through the hall, always one study predominately according to the place where you are (Spohr, 1865, as quoted in Richards, 1962, p. 8).

Logier thought his group piano classes were particularly helpful for beginning pianists because the students were engaged in playing in ensembles throughout the class. He thought that by playing the piano with others, beginning pianists could develop a sense of rhythmic continuity and fluent piano playing. Logier provided training for the group piano teachers at his school and wrote a piano method in three volumes that taught both principles of harmony and piano repertoire. He proposed that a fundamental knowledge of theory would produce well-rounded musicians and improve students' performances. The effectiveness of Logier's music school attracted many visitors from Europe and the United States, many of whom, following their visits, adopted the group piano class format and implemented Logier's methods (Skroch, 1991).

In the mid-19<sup>th</sup> century, group piano classes appeared in the private female schools of Mississippi, Tennessee, and Virginia (Richards, 1962). These piano classes were remarkably small, with only two or three students enrolled in each class. Like Logier's classes, the goal of group piano classes in these schools was to develop technique and learn piano repertoire. These piano classes received harsh criticisms from private piano instructors who thought that group piano classes could not develop a thorough understanding of the keyboard or develop a strong sense of rhythm as Logier suggested.

Despite the criticisms published at that time, the group piano class format continued to spread across the United States (Richards, 1962; Skroch, 1991). In 1869, John Hassler established a private, music boarding school in Salt Lake City, Utah, that included group piano classes in the music curricula. The purpose of these classes was to help students develop a strong sense of musicianship. Brigham Young University in Utah also included a group piano class in the music curriculum under the tutelage of C. W. Reid, a former student of Hassler. Many graduates of Reid's piano classes secured

prestigious music careers, including positions at the Church of Latter Day Saints in Salt Lake City, Utah. The success of these graduates silenced some of the critiques voiced a decade earlier by private piano instructors who thought group piano classes could not develop accomplished musicians.

While group piano instruction continued in private music schools, Calvin Cady, considered to be the father of group piano instruction in the United States, began advocating for the inclusion of group piano classes into public school curricula (Richards, 1962). Cady believed that the true benefits of class piano instruction lay in the group spirit present in these classes. According to Cady, participating in group activities elicited a level of motivation not present in private piano instruction.

Like Logier's piano classes, which contained students of wide ranging abilities, Cady used group piano instruction for students at every stage of technical development. However, unlike Logier, Cady separated classes by ability. Students were enrolled in classes with students of similar musical abilities resulting in smaller class sizes, with no more than four students working together. Cady thought this small class size led to a more thorough understanding of music theory, provided students with multiple experiences for musical expression, and elicited the motivational benefits of group interactions. Cady's philosophy and methods for group piano instruction were discussed frequently in articles published in music educators' journals (Richards, 1962). The focus of these articles had shifted from berating those who advocated for group piano classes to celebrating the successes of group music instruction.

Group piano classes began to permeate public school systems in Boston around 1913 (Richards, 1962), and two years later, appeared in public elementary schools in New York and Minnesota. The superintendents from those districts soon discovered that the most difficult aspect of implementing a group piano program was finding competent

teachers, as many of the piano teachers available at that time had little experience teaching groups of students (Richards, 1962). The school districts in Minnesota chose to employ music educators with experience in piano, rather than private piano instructors whose training was limited to performance. The primary schools in New York and Boston also found it difficult to find qualified teachers for these classes (Richards, 1962).

At that time, another difficulty faced by group piano teachers was the lack of materials and methods available. Public school piano classrooms typically contained one acoustic piano and several wooden or cardboard keyboards on which students would practice. One can imagine that children would rapidly lose interest when playing on silent, cardboard keyboards rather than on pianos. The lack of keyboard instruments in the music classroom was a major problem for these group piano teachers.

In the 1920s, many group piano teachers used a method best described as a song approach, so that students sang during class and took turns playing the piano (Richards, 1962). One of the first method books used in elementary classrooms was developed in 1920 by Thaddeus Giddings, a group piano teacher in Minneapolis. The book provided instruction on playing by ear, chord progressions, music reading, transposing, technical development, and memorizing standard piano repertoire (Richards, 1962).

By 1924, public schools in 12 states offered group piano instruction at the elementary level (Richards, 1962). As more principals throughout the United States incorporated group piano instruction in the music curricula of their schools, it became clear how much students enjoyed these classes. In a letter to *Elementary School Principal*, Joseph Maddy remarked that:

Class instruction in piano is not a fad or an experiment. It has come to stay because it's pedagogically sound and economical. More children become interested in learning to play the piano when they can learn in classes, for the old piano lesson scheme was lonesome and devoid of interest to all except the most

talented children and the ‘plodder’ who substituted persistence for talent (Maddy, 1929, as cited in Richards, 1962, p. 82).

Although group piano classes were considered an effective way to provide many students with experience at the keyboard, the prevalence of public school group piano classes began to decline in the late 1920s. This decline was likely due to financial difficulties, the lack of qualified teachers, and shortage of keyboard instruments (Skroch, 1991). In spite of the decrease in piano class offerings in the public schools, new materials were specifically developed for the teaching of group classes, such as the *Burrowes’ Piano Primer*.

Until the 1930s, group piano classes were designed for precollege students exclusively; however, in 1931 Raymond Burrows, a leader in group piano pedagogy experimented with group piano courses for the adult beginner (Skroch, 1991). He used students at Columbia University as subjects for this new type of group piano instruction. His classes were a monumental success and Burrows began incorporating group piano classes for adults into public colleges’ and universities’ curricula. Twenty years later, more than 256 universities and colleges throughout the United States offered group piano classes for beginning adults (Locke, 1987; Skroch, 1991). Additionally, teacher training became available for educators interested in group piano pedagogy (Richards, 1962). The earliest record of group piano pedagogy courses was at the Teachers College at Columbia University in 1925 (Skroch, 1991).

The university-level piano classrooms of the 1940s held between three and ten acoustic pianos and were designed to provide students with an introduction to standard piano repertoire and functional piano skills, such as sight-reading, harmonizing, and transposing. The primary justification for including group piano classes in the undergraduate music curriculum was the efficient use of faculty members’ time (Locke,

1987). By teaching a group of students the same material covered in private lessons, piano teachers were able to address the needs of many students at once. Group piano classes also provided students with an opportunity to meet with their teachers more often. Although individual lessons would traditionally be offered once a week, group piano classes would meet two or three times weekly. By spending more time with their piano teachers, students were exposed to more material and gained additional practice on the tasks introduced in these classes (Locke, 1987; Skroch, 1991).

Group piano classes were revolutionized by the development of electronic keyboards; the first of which was manufactured by Wurlitzer in 1954 (Goltz, 1975). Ball State University in Indiana was the first university to own an electronic piano laboratory and their laboratory, installed in 1956, became the model laboratory for university group piano programs in the country. Although other music classes had provided instruction on musical instruments, piano instruction was very limited before the invention of the electronic piano laboratory because the size of the acoustic instrument greatly restricted the number of students that could be enrolled in each class.

With the introduction of headsets connected to the electronic keyboards a decade later, teachers were able to provide students with an opportunity to practice individually during class without interrupting other students. Headsets allowed teachers to provide individual students with practice on the specific tasks they needed to develop within group piano classes.

It would be difficult to imagine 12 massive pianos and 12 music students of varying advancement assembled in one huge practice hall contributing to a cacophony of ear-splitting noise. With the electropiano, such a group may assemble in a regulation size classroom, seat themselves at a full-keyboard instrument and practice 12 different musical scores (Greeslin, 1971, p. 43).

The electronic keyboard and headsets truly changed the manner in which group piano classes were taught. By the 1970s, the vast majority of universities in the United States

offered class piano to their music students, and more than half of those schools used electronic keyboards in a piano laboratory devoted solely to group piano courses (Goltz, 1975). Since then, piano laboratories have added a visualizer, audiovisual equipment, and a sound console to facilitate communication between each student and the teacher.

Due to group piano's growing presence in universities, colleges, and junior colleges (Chin, 2002; Osadchuk, 1984), national music organizations began monitoring course content and setting standards for group piano students to attain. Although group piano teachers generally agreed that piano classes were an efficient and effective mode to teach piano skills to undergraduate music majors, teachers did not agree on a uniform curriculum to fulfill the needs of their students (Chin, 2002). Some of those disparities included the importance of certain functional skills, the texts used in group piano classes, and the level of proficiency that undergraduate music students needed to demonstrate (Webber, 1958). As a result, national music organizations started developing standards for the training of piano skills with the first one being published in 1929 in the *Journal of Proceedings of the Music Supervisors Conference* (MENC, 1929). This document stated that music majors should devote time to sight-reading accompaniments, transposing, improvising melodies, and any other piano skills that a music teacher may need.

In 1942, the National Association of Schools of Music (NASM) released a report stating that music education majors were to develop the musical tools they would need to inspire students to participate in musical activities (NASM bulletin, 1943). The musical tools included piano proficiency. Three years later, the Music Educators' National Conference (MENC) Teachers College Curriculum Committee recommended basic standards for music educators and delineated specific requirements for piano class. Piano classes were to prepare students to sight-read hymns or pieces of a similar difficulty



level, as well as play “fluently and with musicianly feeling material on the level of his contemplated teaching” (MENC, 1945, p. 23).

The guidelines outlined in these earlier documents were expanded in the National Association of Schools of Music (NASM) bi-laws, written in 1953. The bi-laws stated that music majors must develop functional piano ability, which they defined as the ability to:

(1) sight-read songs of the type found in a song book, (2) harmonize at sight, improvising a simple piano accompaniment for songs requiring the use of I, IV, and V chords and some simple modifications; also to transpose the songs and harmonizations to other keys, and (3) sight-read fairly fluently simple accompaniments, vocal or instrumental, and simple piano compositions of the type used for school rhythmic activities (p. 18).

In 1967, the Music Educators National Conference (MENC) published *Teaching Piano in the Classroom and Studio*. This document listed 11 benefits of functional piano ability for music educators.

1. The vertical and horizontal reading and playing of notes from the Grand staff is good preparation for open-score reading, either four-part choral, or full-page orchestra and band scores.
2. Piano experience helps the prospective conductor of a chorus, band or orchestra to hear complete harmony as well as to isolate individual lines.
3. The ability to play the piano score of a composition for orchestra, band, or chorus helps the director to select works for his organizations to perform and enables him to develop his own interpretation prior to rehearsals.
4. The piano offers the conductor a ready means of illustrating many of the musical instructions he gives to his performers.
5. Knowledge of the keyboard helps the music student to learn, and later, to teach harmony and theory.
6. The teacher of general music classes uses the piano to accompany class singing and to illustrate themes and stylistic features of the compositions being studied.

7. The piano is useful for teaching vocal solos and for playing voice parts for small ensembles.
8. The teacher of beginning and intermediate instrumental classes uses the piano for accompanying his groups.
9. Often, the school music teacher must play assembly songs by ear, by sight, or by memory, and frequently needs to transpose and to improvise chordal accompaniments. In addition, he must be prepared to play written accompaniments for groups or soloists in emergencies when regular accompanists are unavailable.
10. The music teacher will need pianistic skill if he is asked to supervise piano classes in the school.
11. Students and the public often equate musicianship with the ability to use the piano effectively (p. 5).

These 11 benefits have often been used as the justifications for including group piano instruction for music majors in universities and colleges.

Currently, the NASM guidelines still refer to the development of keyboard competency (NASM, 2009), requiring that music education majors have the “performance ability sufficient to use at least one instrument as a teaching tool and to provide, transpose, and improvise accompaniments” (2009, p. 90). Most institutions use group piano courses to fulfill this requirement (Chin, 2002).

Many universities now offer group piano courses to music majors for the development of functional piano skills, and to non-music majors for a general overview of piano study (Chin, 2002; Osadchuk, 1984). The majority of universities and colleges developed a two-year sequence of group piano courses that provides beginning piano students with an introduction to fundamental piano technique, functional piano skills and standard piano repertoire. Over the last 40 years, group piano teachers have refined their methods and materials and have developed textbooks that introduce the functional piano skills described in the national music organization standards and guidelines. Group piano

class sizes have fluctuated, with current group piano classes ranging from four to twenty students (Osadchuk, 1984).

The need for piano skills by professional musicians and school music teachers in particular, has been the driving force for the inclusion of group piano classes into undergraduate music curriculum for the last 30 years. This need has also encouraged research on the organization of piano classes and the teaching of functional piano skills.

### **GROUP PIANO ORGANIZATION AND TEXTS**

How are university-level group piano classes currently organized? Have they adhered to the standards established by NASM? Group piano classes are now commonplace at most universities and colleges in the United States and other countries have begun offering group piano classes at their universities as well. Scholars from Korea (Jung, 2005), Taiwan (Chen, 2001), the Republic of China (Kou, 1986), Brazil (da Costa, 2004), and Turkey (Kasap, 1999) have proposed that their national group piano curricula reflect the goals and structure of group piano programs in the United States. Most universities and colleges in the United States require that students take a piano class or series of classes as part of their musical studies. The ultimate goal for these classes is that students will be able to use the piano to accompany ensembles, transpose parts, and lead classroom activities following the completion of these courses. Typical group piano programs are between two and six semesters long and are designed to prepare music majors to use the piano skills deemed important by national music organizations (Sonntag, 1980; Webber, 1958) and school music educators (Christensen, 2000; Freeburne, 1952; March, 1988; McWhirter, 2006).

Group piano courses are generally taught during the first two years of undergraduate degree programs alongside other fundamental music courses, such as music history, aural skills and music theory. Group piano and theory texts often introduce

and reinforce similar concepts (Larsen, 2007) and a few pedagogues have attempted to improve theory comprehension and piano performance skills by emphasizing the parallel concepts taught in the two curricula. For example, Bogard (1984) designed a comprehensive fundamental musicianship course in which music theory, aural skills and group piano were taught in an interrelated manner. She tested the effectiveness of the approach with 16 group piano students by presenting identical theory lectures to all students and providing half of the students with additional theory training at the keyboard to illustrate tonal relationships for a period of 30 weeks. While it was originally thought that integrating group piano and music theory courses would enhance both music theory comprehension and piano performance skills, Bogard found that the interrelated approach to fundamental musicianship did not increase students' knowledge of music theory, nor did it significantly improve students' piano abilities. Certainly appreciating similar concepts in music theory and group piano classes has value, and perhaps an integrated approach to the instruction on music fundamentals would be a more efficient and effective use of undergraduate music majors' time and provide students with a comprehensive educational experience.

Some teachers have argued that a Comprehensive Musicianship approach, in which fundamental music skills are developed through music analysis, performance, and the creation of original music, would be the most efficient way to use students' time in group piano (Dodson, 1980; Lowder, 1973a; Nalbandian, 1995; Truland, 1999). For example, Dodson (1980) designed group piano instruction that incorporated musical analysis and aural training, tasks typically taught in music theory classes, into a traditional group piano curriculum. He proposed that an interrelated approach to group piano and music theory would enhance the students' comprehension of both subjects. Four sections of a fundamental music course were used for this experiment. All of the

sections received instruction on the same material for a period of 15 weeks; two of the classes (the control group) used a more traditional, performance approach, while the other two classes (the experimental group) received classroom instruction which included composing new music, musical analysis, and aural training. The students who engaged in musical analysis and aural training in group piano made slightly more improvement, though nonsignificant, on the Music Achievement Test 1 and 2 than the students who were enrolled in the performance approach course. Some teachers have argued that Comprehensive Musicianship would be ideal for group piano if classes were small, for example with seven or fewer students, and faculty had training in analysis, performance and composition (Trantham, 1970). Unfortunately, class sizes have not remained small and students are often in classes with as many as 15 other students (Chin, 2002) making it impractical to apply the Comprehensive Musicianship approach to the teaching of group piano.

Although a number of different approaches to group piano instruction have been proposed, the research literature has not clearly identified the best teaching practices. Group piano teachers have used many different approaches to develop functional skills: integrating instruction on group piano with theory, incorporating aural skills and composition in piano instruction, and experimenting with the number of credit hours required of undergraduate music majors. But, the question that has yet to be answered is: How effectively do group piano classes prepare students to use the piano skills they will need upon graduation?

In addition to the organization of group piano classes, researchers have examined the textbooks used in current group piano classes. Many textbooks have been used for group piano classes; in fact, one study found that of 49 secondary schools that offered group piano, 48 used different piano texts in their classes (McCalla, 1990). University-

level group piano classes also have vast quantity of texts available (Graff, 1985; Larsen, 2007; Locke, 1987; Williams, 2000), and there is little evidence that one textbook is used consistently more than any other.

Some of the most common group piano texts in the United States are: *Keyboard Musicianship* (Lyke, Caramina, Alexander & Hayden, 2003), *Piano for the Developing Musician* (Hilley & Olson, 2006), *Contemporary Class Piano* (Mach, 2004), *Group Piano for Adults* (Lancaster & Renfrow, 2004). The information included in these four books varies considerably. Several of the texts use a music theory approach to group piano instruction (Hilley & Olson, 2006; Lyke, Caramina, Alexander & Hayden, 2003), where theoretical concepts are introduced as they are in theory textbooks, while other textbooks resemble piano lesson method books (Lancaster & Renfrow, 2004; Mach, 2004). Some group piano texts emphasize 20<sup>th</sup> century literature (Hilley & Olson, 2006; Mach, 2004), while others have included primarily tonal music from the Baroque, Classical and Romantic musical eras (Lancaster & Renfrow, 2004; Lyke, Caramina, Alexander, & Hayden, 2003). This range of textbooks provides group piano teachers with the opportunity to select a book that fits their own personal philosophy; however it has led to undergraduate music majors who have not developed the same piano skills to a comparable degree of proficiency.

In addition to the wide variety of group piano texts available to piano instructors, some piano teachers have developed supplementary materials to enhance group piano instruction. Fisher (2006) wanted to find a way to encourage students to participate actively in class and created classroom activities to promote motivation and enjoyment in his students. He developed five activities designed to enhance students' playing and foster a more open and positive learning environment. He tested the efficacy of the activities by completing a research study with 23 students. After using these activities in

class, students were asked to comment on them. The majority of the students reported that their playing improved and that by participating in the learning activities they thought more positively about their group piano experiences. At no point during this study did Fisher collect information on *how* the activities improved or impacted students' performances, so it is unclear if these activities actually aid in the development of piano skills. Although no information was gathered about students' performances, a change in students' attitudes toward group piano classes may have implications beyond their perceptions. If students enjoy their group piano classes more, then they may be more motivated to learn the material taught in group piano thoroughly and attend more carefully to the skills introduced in group piano classes. This change in attitude could result in a greater level of proficiency long-term.

In a similar study, Lindsay (2007) tested 76 classroom activities designed to teach or reinforce concepts commonly introduced in group piano classes and improve students' perceptions of their classes. As part of Lindsay's study, four teaching assistants used the activities in their group piano classes and then completed a survey about the activities' accessibility and potential benefits to the understanding and development of piano skills. Teachers were generally positive about the design of these activities and found that their students truly enjoyed them. A disadvantage cited by one teacher was the amount of preparation needed to implement some of the projects. This teacher preferred to teach group piano classes by introducing and practicing piano skills without using games or other activities.

Though an abundance of texts and materials are used in group piano classes, some instructors have voiced concerns about the content included in those textbooks (Graff, 1985; Williams, 2000). One critic found that no single textbook provided adequate training on the functional piano skills used by music educators (Graff, 1985). Following a

review of eleven commonly used piano texts, one group piano teacher concluded that class piano texts introduce too many skills, and as a result students do not develop fluent piano technique (Williams, 2000). In most piano classes, students are required to learn how to improvise, sight-read, harmonize, accompany, and transpose. As a result group piano teachers devote a small amount of class time to each of those skills, but there is rarely enough time to dedicate an entire class to a single skill. As such, students are introduced to many skills, but seldom hone their skills to a high level of proficiency. Throughout her many years instructing group piano classes, Williams found that students rarely surpassed the elementary stage of technical development. She proposed that by developing their piano technique to a level that is comparable to the reading ability students already possess when they arrive at college, they could move past the late elementary echelon of technique. Both Graff (1985) and Williams (2000) raise important questions about group piano classes: Do group piano classes introduce music majors to the piano skills needed by professional musicians? If classes do provide an introduction to the piano skills needed by professional musicians, are students developing those skills to the level they will need in their music careers?

Beginning with the establishment of NASMs bi-laws in 1953, teachers began to organize their piano programs so that music majors were required to demonstrate the skills they developed in group piano classes (Skroch, 1991). Many universities, conservatories, and junior colleges now expect students to pass a piano proficiency exam to display the acquisition of certain functional piano skills (Bobetsky, 2004; Lusted, 1985; McDonald, 1989; Osadchuk, 1984; Spicer, 1992).

Piano proficiency exams are generally a cumulative exam, following a group piano course or series of courses, requiring students to demonstrate their pianistic ability on a variety of skills, including: scales, piano repertoire pieces, sight-reading,



transposing, improvising, and harmonizing. After examining the proficiency requirements at several institutions, Sonntag (1980) found that “some institutions require a level of advancement at entrance that is comparable to that required by others at graduation” (p. 75). In other words, students from one school are required to play a sonata for their proficiency exam whereas students from another school only play a short, simple piece. Twenty years later, Christensen (2000) and Uszler (2000) both found that the proficiency exams at universities throughout the United States still show a lack of uniformity. Most group piano proficiency exams expect students to demonstrate the same piano skills regardless of their intended career (Spicer, 1992). For example, rather than having choral music education majors demonstrate proficiency by sight-reading vocal scores or music theory majors showcasing their abilities by realizing figured bass, in the most common proficiency exams all students play the same musical examples.

A small proportion of university proficiency exams do, however, differentiate between the skills needed by various music careers (Rast, 1964). Rast examined the piano proficiency requirements for music education majors and elementary education majors at universities and colleges in Illinois and found that elementary education majors and music education majors were asked to demonstrate piano proficiency in different skills. Elementary education students were tested on improvisation and creativity – an area of piano study not often covered in group piano classes, while music education majors demonstrated piano proficiency using more common functional piano skills such as technique, sight-reading, harmonizing, and accompanying. Rast thought that by differentiating between the piano skills needed by music educators and elementary educators, students would be more aware of the skills they needed to develop and would therefore be more motivated to practice. If students understood why they were taught

certain piano skills and how they would use those skills in the future, it is possible that they would be more motivated to develop the skills they would need in the future.

Researchers have identified a number of different texts, activities, and proficiency exams currently used in group piano classes; however, this research has not identified the most effective methods for developing functional piano skills in undergraduate music majors. Are the texts, activities, and exams used in group piano classes meeting the standards set forth by NASM and MENC? Are teachers using these materials and methods to help prepare university music students to use the piano in their career?

### **GROUP PIANO TEACHERS**

Selecting and recruiting teachers for group piano classes has been a source of difficulty for nearly 100 years (Richards, 1962). As early as 1915, supervisors of group piano programs in elementary schools expressed apprehension about hiring private piano teachers to teach group lessons (Richards, 1962). Ultimately, the superintendents at these schools decided against employing private piano teachers to teach group piano classes, and instead hired classroom teachers with piano experience for these classes. The justification for their choice was that they believed piano teachers would be unable to facilitate learning because they did not have training in group teaching techniques. Training for group piano teachers did not become available until the 1930s, and even then, courses in group piano pedagogy were not commonplace.

Although group piano classes are now ubiquitous in universities, colleges, and junior colleges, most of the teachers responsible for group piano still have little experience teaching multiple students simultaneously (Kim, 1998). Recently, an effort has been made to improve the training of group piano teachers (Skroch, 1991). Courses in group pedagogy are now offered in universities, generally at the graduate level. Piano majors interested in becoming group piano teachers must wait until they are in a masters

or doctoral music program to take such courses. Often, by the time they start graduate studies, they have already obtained a teaching assignment requiring them to teach group piano classes (McCalla, 1990).

Many of the teachers responsible for group piano classes are classically-trained, graduate students in piano performance (Kim, 1998; Laughlin, 2004). The idea that graduate assistants may not be well-prepared to assume teaching responsibilities was investigated by Kim (1998). She hypothesized that the prior teaching experiences of graduate assistants in group piano would impact the way they taught group piano classes. Kim surveyed graduate assistants who taught non-music major group piano courses at 58 doctoral-degree granting universities. The analysis of data from universities that offered non-music major group piano courses taught by graduate assistants ( $n = 19$ ) showed that the majority of teaching assistants earned degrees in performance, had little or no experience teaching group piano prior to their teaching assignment, and thought that teaching group piano was far more difficult than teaching piano individually. Kim also found that a lack of faculty support and guidance was a major concern for these graduate assistants. She concluded that faculty members play a pivotal role in the development of effective group piano teachers and that without the support of faculty supervisors, graduate assistants' comfort and confidence in their ability to teach group piano classes suffers.

Faculty support can be demonstrated in a number of ways: supervising classes, meeting regularly to discuss issues in the classroom, or providing end of term reviews. Kim (2005) proposed that she could determine the level of faculty support by assessing teachers' self-efficacy and measuring students' opinions of their teachers' abilities. Kim sent questionnaires to 62 graduate assistants who taught group piano at universities offering doctoral degrees in piano performance and surveyed the 867 students enrolled in

group piano classes with those same teaching assistants. She found that graduate assistants were more comfortable teaching group piano classes when faculty members actively supported their teaching. Students enrolled in group piano classes also rated their graduate assistants higher if their teachers reported a high level of faculty support. Additionally, graduate students with more experience teaching these classes felt more competent teaching their classes than did graduate assistants with less experience. More importantly, their students noticed this difference: Students rated experienced graduate students more positively than inexperienced graduate students. From this study, it is clear that faculty support and previous teaching experience is important and impacts students' perceptions of teacher effectiveness in group piano classes.

Researchers have examined the impact of training on group piano approaches and curricular content. Locke (1987), Chin (2002), and Johnson (1987) used surveys, interviews, or a combination of both surveys and interviews to determine whether the content of piano classes was affected by the training a teacher received. While these three authors employed similar methodologies, the results of their studies are strikingly different.

The primary purpose of Locke's (1987) survey to 29 universities in the southwest was to determine the status and practices of group piano instruction. Locke found that class piano was consistently used to teach functional piano skills and that most of these classes occurred in a piano laboratory. In fact, she found little evidence to support the hypothesis that teachers' training impacts the way they establish the curriculum of group piano classes. The results show that regardless of the training teachers had received, group piano instructors generally agreed on the instructional objectives for group piano classes. However, when asked to elaborate on the purpose of group piano classes, teachers with music education or piano pedagogy degrees were more able to clearly

define the curricular objectives of piano classes than were teachers with piano performance degrees. Although Locke determined that training in group piano pedagogy was not essential in developing a consistent curriculum for group piano classes, both Johnson (1987) and Chin (2002) found that teacher training impacts the skills taught in group piano classes.

Johnson (1987) interviewed five expert group piano pedagogues and surveyed 31 group piano teachers and 91 group piano students to determine which functional piano skills they taught most frequently and considered most important. All three groups agreed that sight-reading, playing chord progressions, transposing, accompanying, and playing by ear were skills that were vital to music students. Despite their knowledge of the most important piano skills, students reported that their teachers placed excessive importance on developing technique and memorizing standard piano repertoire suggesting that though group piano teachers believe certain skills are important, teachers may not allocate enough time to the skills they believe are important potentially prohibiting students from developing those skills to a sufficient level of proficiency. Group piano teachers with a background in music education emphasized the development of functional piano skills to a greater extent than did group piano teachers with degrees in keyboard performance or other areas. Johnson proposed that universities recruit teachers who will emphasize functional piano skills. He suggested that such hirings include teachers with music education backgrounds who would focus on developing the skills that are most important to future music educators.

Chin (2002) also explored the impact of teacher training on the skills emphasized in group piano courses by surveying 304 group piano instructors, including faculty and graduate assistants. Both faculty members and graduate assistants considered sight-reading and harmonizing important skills to develop and spent a considerable amount of

class time on these two skills. Many of the group piano instructors surveyed would have taught transposing, score reading and accompanying more often if they were more comfortable performing these skills in front of their students. Most of the faculty members had received some training on classroom instruction, but the graduate assistants had not taken a comparable pedagogy course. As a result, graduate assistants spent a greater amount of class time than faculty members on the skills with which they were most familiar (i.e. the development of technique and learning standard piano repertoire). Both Johnson (1987) and Chin (2002) found that sight-reading and harmonizing were skills considered important by group piano teachers, but that the training or prior experience of those teaching the class affects the extent to which they actually teach them. Harmonizing and sight-reading are also viewed as important skills by group piano teachers and music educators alike, and many of the other skills outlined in Robinson & Jarvis's (1967) handbook are often viewed as essential tools for music teachers, such as transposing melodies, improvising accompaniments, sight-reading, reading open scores, and playing scales and arpeggios (Christensen, 2000).

While the degree to which many of the piano skills are taught in group piano classes varies greatly among group piano teachers, the way in which expert group piano teachers conduct their classes is highly consistent (Arrau, 1991). Arrau observed six expert group piano teachers to determine how they organized their classes and found that they spend the majority of class time talking and playing the piano along with their students. In fact, only a small proportion of class time was devoted to small group playing or small group discussions. Other researchers have corroborated that group piano teachers rarely use small group activities (Burkett, 1982).

Researchers have experimented with grouping students of similar personality characteristics (Kim, 1993; Sucher, 1977) and group sizes (Jackson, 1980) to determine if

either of those two factors significantly alters the productivity or performance skills of group piano students. Sucher (1977) examined the effect of grouping students by their personality characteristics, namely judging or perceiving personalities as measured by the Myers-Briggs Type indicator, on piano performance skills. Sucher found that students' performances did not change whether they were grouped with students with similar or different personalities. Additionally, students' performances were not affected when learning 15 basic piano exercises in groups of two, four, six or eight students (Jackson, 1980). Grouping piano students by their personality characteristics or into smaller classes did not significantly improve the piano performances of the group piano students.

Another difficulty in implementing small group activities is the need to accommodate students of varying ability levels. Addressing the range of ability levels present in each class can be a daunting task. To examine this aspect of group piano instruction more closely, Duke & Benson (2004) studied the effect of instructional pacing on group piano students' performances. In this study, group piano teachers listened to one of the weakest performers of the class and directed the instruction for the entire class exclusively to meet the needs of that particular student. All of the other students were unaware that the feedback and directives given to the class resulted from that one student's performance. By listening to a single student, both the number of student performances and the number of teacher activities increased. One might argue that students would find this approach slow; however the attitudes of students in this study were unchanged as a result of this methodology: Duke & Benson found that the students did not notice the change in instructional pacing.

Training effective group piano teachers is essential to the continued existence and success of class piano programs. By providing graduate students who teach group piano classes with additional opportunities to learn about teaching techniques and to gain

experience teaching group piano classes, future piano teachers will be more successful in developing functional piano skills in their students. In addition to completing coursework on group piano pedagogy, students interested in teaching group piano classes might consider becoming familiar with approaches to the functional piano skills introduced in group piano classes.

### **FUNCTIONAL PIANO SKILLS**

Researchers in group piano pedagogy have investigated the functional piano skills commonly included in group piano proficiency exams such as improvising, harmonizing, and sight-reading (Skroch, 1991). These skills, often regarded as necessary tools for future music educators to develop (Christensen, 2000), have been examined in order to search for efficient methods of instruction for group piano classes.

Group piano teachers and students alike may understand that the development of a piano skill is important, but whether students are able to perform the skills is another matter entirely. Kostka (1997) examined this particular difference in university-level group piano classes. Thirty-two sophomore group piano students were asked to rank their perceived ability and the importance of sight-reading, musicality, hand shape, and proper technique at the beginning of the semester. At the beginning of the year, students' thought that sight-reading and musicality were the two most important skills, however they did not think they could sight-read or play the piano musically as fluently as they could play the piano with the correct fingerings and hand shape. Following a semester of study in which students participated in five one-week units that focused on each of five skills (sight-reading, musicality, hand shape, fingering, and technique), Kostka delivered the same questionnaire to participants and they were again asked to rank their perceived ability and the importance of sight-reading, musicality, hand shape, fingering, and technique. After a semester, students thought that their sight-reading and musicianship



skills had progressed to a level comparable to their ability to play the piano with proper technique, follow principles of fingering, and maintain a proper hand shape. Throughout the course of a semester, students were able to build their confidence on two complex musical tasks: sight-reading and musicality, suggesting that with guided practice students gain self-assurance in their ability to perform the piano skills taught in group piano classes. This study provides insight into the values and perceptions of group piano students; however Kostka did not assess the development of those five piano skills. At no point during her study did Kostka assess the progression of students' piano abilities; as such it is possible that although participants thought they were improving, they may not have actually improved their piano skills. So, how do we help students acquire functional piano skills?

One piano skill valued by music educators is improvisation (Christensen, 2000). Improvisation, or the spontaneous creation of music, has been part of musical study since the baroque era (Dobbins, 1980). In group piano classes, improvisation is typically used to provide an accompaniment to a given melody, to supply a melody to a chord progression, and to improvise freely over the 12-bar blues progression. Improvisation is frequently used to develop students' piano technique because they can create music at a more advanced level than the notation they are able to read (Larsen, 2007). New pianists often improvise melodies that cover a wide range of the keyboard, even if they can only read a few lines and spaces on the treble and bass staves.

When group piano students were asked what they enjoyed most about improvisation, they reported the appeal of the inherent creativity and lack of rules of the task (Chess, 2005; Kishimoto, 2003; Laughlin, 2004). Students were generally positive about their improvising experiences and thought their general playing ability improved as a result of improvisation practice. Improvisation is a required skill for music majors to

learn because of the creativity and technical development it fosters (Montano, 1983), and because music teachers are often asked to improvise a simple melodies or accompaniment for their classes or ensembles (Christensen, 2000; Lyke, 1969). Improvisation is only one skill that undergraduate music majors need to develop during their college studies. Two other skills, harmonizing and sight-reading, are piano skills greatly valued by in-service music educators (Christensen, 2000). Though these skills are viewed as vitally important to teachers, only a few studies have examined how to improve the harmonizing and sight-reading skills of group piano students.

Many group piano textbooks provide MIDI accompaniments for literature pieces, sight-reading examples, and harmonization exercises to increase students' enjoyment of group piano classes and provide students with rhythmic support (Lancaster & Renfrow, 2004). Researchers have examined the effect of computer-assisted technology, including MIDI accompaniments, on the sight-reading performance of group piano students (Ajero, 2008). Twenty-nine third-semester group piano students practiced two compositions for a period of two weeks; half of the students practiced with a MIDI accompaniment, and half of the students practiced with a MIDI accompaniment in conjunction with the guide mode on a Yamaha keyboard. The guide mode, a form of computer-assisted technology, consisted of a lesson plan created by the researcher designed to guide students through a practice session on two piano compositions. Students who used the computer-assisted technology made significantly fewer pitch errors than the students who worked individually. Students who practiced with the guide mode found it extremely helpful and thought it improved their general practicing skills. Some students thought that practicing with the guide mode helped them organize their practice, because it provided them with explicit instructions such as, practice hands separately and play hands together at a slow tempo before playing hands together at the performance tempo.

Group piano students frequently credit the use of technology with improvements in their own playing or practice techniques (Benson, 1999; Hagen, 2001; Widen, 1999). Participants in one study thought practicing with instructional media was significantly easier than practicing on their own (Benson, 1999). As such, teachers have been interested in the development of new keyboard technology designed to improve their group piano students' sight-reading skills (Chao, 1998; Craige, 1993; Renfrow, 1991; Tomczak, 2000).

Betts & Cassidy (2000) proposed that practicing with MIDI accompaniments would improve music majors' harmonizing and sight-reading skills. They conducted a study with 39 group piano students who, after taking a pretest to assess their harmonizing and sight-reading abilities, were asked to practice harmonizing and sight-reading with MIDI accompaniments for one semester. At the end of the semester, students were tested to determine if their harmonization and sight-reading skills had progressed. Betts & Cassidy found that students made significantly fewer errors on the posttest than they did on the pretest. They analyzed students' performances of each hand separately to identify the location and type of errors made. More mistakes occurred in participants' left hands in both the sight-reading and harmonization tasks, though the number of mistakes in the left hand decreased significantly from pretest to posttest. The researchers proposed that a clearer understanding of the music theory concepts underlying the exercises was the cause of the decrease in errors in the left hand because participants had an additional semester of theory study. They thought the extra semester of music theory improved students' understanding and therefore their execution of the harmonization task. Students' left hands, however, were never as accurate as their right hands in either the sight-reading or the harmonizing task. Betts & Cassidy proposed that this was due to either the technical demands of playing chords or to a concentrated focus on the hand

which played the melody. The findings of this study inspired Betts, Cassidy & Hanberry (2001) to follow it up with another investigation.

Cassidy, Betts & Hanberry (2001) examined the effect of the melody's placement on group piano students' accuracy in harmonization and sight-reading tasks. The researchers were interested in determining if students' accuracy was dependent upon the hand that played the melody. Forty group piano students were divided into two groups: the control group, which harmonized and sight-read melodies on their own, and the experimental group which received additional practice on pieces where the left hand played the melody and the right hand played the accompaniment. Following a semester of study, they found that students made significantly fewer pitch and rhythm errors. Students made greater improvements in their left hands than their right hands, regardless of the group to which they belonged (experimental or control). However, participants still made fewer errors in their right hands than their left hands. The authors noticed that the experimental group paid closer attention to the harmonies present in the posttest examples than did the control group. They suggested that the treatment, which included extensive practice on chordal accompaniments in both the right and left hands, was effective in training group piano students to examine scores prior to playing. Betts, Cassidy, & Hanberry suggested that group piano teachers develop additional strategies, such as using the metronome, to improve group piano students' playing.

Three researchers have used the metronome as a strategy to improve beat synchronization and reduce the number of errors in beginning pianists' performances (Coffman, 1980; Hanberry, 2004; Whittaker, 1997). Hanberry proposed that by practicing with the metronome group piano students would improve their rhythmic consistency. Thirty-nine group piano students practiced unfamiliar piano pieces for a period of eight weeks; some students were asked to practice with the metronome and others practiced

without the metronome. Those students who practiced with the metronome made fewer rhythmic errors, what they called beat consistency, in the posttest than in the pretest. Regardless of the group to which they were assigned, students made fewer total errors on the posttest than they did on the pretest. In addition to the improvements made in beat consistency and general accuracy, Hanberry analyzed the types of errors group piano students made. The performances of each hand were analyzed individually and Hanberry found that the hand that played the melody was more accurate than the melody that played the accompaniment.

While only a few researchers have examined harmonization and improvisation (Betts & Cassidy, 2000; Chess, 2005; Laughlin, 2004; Watkins, 1958), sight-reading has received extensive attention from researchers in music education. Sight-reading, the performance of music without prior rehearsal, is one of the most important skills for musicians to develop (Fredrickson & Hackworth, 2005; Teachout, 1997). Indeed, music teachers at all levels have expressed how important it is to develop effective sight-reading skills (Christensen, 2000; Peterson, 1954). Researchers have sought to identify typical sight-reading errors, develop methods of sight-reading improvement, and determine contributing factors to sight-reading success (Zhukov, 2006).

In an attempt to better understand typical sight-reading errors of piano class students, Lowder (1973b) analyzed the errors found in group piano students' sight-reading performances. He administered a sight-reading test to 23 group piano students and found that rhythmic errors were most common and that most pitch errors were a result of students missing notes altered by the key signature. Additionally, Lowder found that errors in pitch often accompanied rhythmic mistakes. If students are unsure of the next pitch and hesitate, a rhythmic error occurs. Most hesitations were analyzed as a rhythmic mistake, even though the hesitation may have been a result of the performer's

inability to determine the correct pitch in tempo. Lowder suggested that teachers stress the importance of rhythmic accuracy even at the expense of an error in pitch. He proposed that teachers use ensemble playing to compel students to continue playing regardless of whether or not they make mistakes. For school music educators, this skill is extremely important. For example, when accompanying a soloist or an ensemble, the pianist cannot stop playing and fix the errors committed. It is essential that piano students practice playing without hesitations.

To determine the validity of Lowder's suggestion that ensemble playing could be used to improve sight-reading performances, Beeler (1996) examined the effects of guided sight-reading practice on sight-reading performance. Fifty group piano students participated in four formats of sight-reading practice: playing with a recorded accompaniment, studying the score (prestudy) prior to sight-reading, engaging in both prestudy and playing with recorded accompaniments, or working without a guided practice model (i.e. control group). Four weeks after a sight-reading pretest, the four groups took a posttest which measured the improvement in students' sight-reading skills. Pitch accuracy improved significantly regardless of the group to which the students belonged. Students who used both prestudy and playing with recorded accompaniments improved in rhythmic accuracy, but the other three groups, who used recorded accompaniments, prestudy, or practiced alone, did not improve significantly from pretest to posttest. Many other studies have found that playing along with recorded accompaniments or ensembles enhances rhythmic continuity (Lowder, 1973b; Micheletti, 1981; Watkins, 1984; Watkins & Hughes, 1968) by prompting students to continue playing regardless of any errors that may have occurred.

In addition to making fewer rhythmic mistakes, students who practice with accompaniments develop more expressive performances at the piano (Davis, 2001).

Davis required 39 second-semester group piano students to play with MIDI accompaniments for two weeks to improve the dynamic range of students' piano performances. Students were divided into three treatment groups: one group practiced alone, the second group played with a MIDI accompaniment with a narrow dynamic range, and the third group played with a MIDI accompaniment with a wide dynamic range. Those students who practiced with the accompaniments that had an exaggerated range of dynamics played significantly more of the indicated dynamics correct on the posttest than on the pretest, though all students demonstrated improvement from pretest to posttest.

Another method often used to improve the sight-reading of group piano students is prestudy, examining the score prior to sight-reading. The most common sight-reading prestudy procedures include singing the melody, identifying key and time signatures, and examining melodic and harmonic content. All three prestudy procedures have been found to improve sight-reading performances (Beeler, 1996; Bozone, 1987; Fincher, 1984). Fincher tested the effects of analytical prestudy procedures, including singing the melody by rote, on the sight-reading performances of 48 group piano students. She found that group piano students who sang the melody by rote prior to sight-reading were significantly more accurate, both melodically and rhythmically, than students who simply glanced over the piece during prestudy.

In a related study, Bozone (1987) exposed 17 group piano students to a sight-reading prestudy procedure that included singing the melody of different musical examples. She found that students who sang the melody as a prestudy aid performed significantly better than those students who examined the key and time signatures and glanced over the form of the piece. Both pitch and rhythmic accuracy improved in those students who sight-sang the melody prior to sight-playing. Sweetnam (2008) also found

that using an aural prestudy procedure, such as singing the melody before playing, improved sight-reading accuracy in group piano students. All three studies, (Bozone, 1987; Fincher, 1984; Sweetnam, 2008) found that sight-reading improved when students developed an understanding of the melodic content present in sight-reading piano pieces.

Sight-reading involves self-correction. As musicians sight-read, they must constantly monitor their performances to determine if any errors occur and adjust their performances accordingly without interrupting the musical discourse. One study examined if the sight-reading performances of pianists would be affected by the lack of aural or visual feedback (Banton, 1995). Students could identify their performance mistakes by hearing (aural) or seeing (visual) what was incorrect. Pianists of varying ability levels were asked to sight-read examples receiving both auditory and visual feedback, sight-read without looking at their hands, and sight-read without producing any sound. Pianists sight-read with the fewest errors when they were sight-reading with auditory and visual feedback or only visual feedback. On the other hand they made the most consecutive mistakes when they were not able to look down at the keyboard. In other words, absent the ability to glance down at their hands, students were unable to recover from an incorrect hand position. This study showcases a typical problem for beginning instrumentalists. Students have not developed sufficient motor memory and often rely solely on visual cues to direct their playing.

Another area of research on the sight-reading of group piano students has focused on identifying factors that predict sight-reading achievement: Students' primary instrument is associated with sight-reading success; students whose primary instrument is not voice generally sight-read better than their vocal classmates (Micheletti, 1981). Also, students with more extensive music experience tend to sight-read better (Clifton, 1986; Cox, 2000; Eaton, 1979; Kornicke, 1993). It is possible that this increase in sight-reading



ability is due to a longer exposure to musical notation. The longer musicians have read music, the more adept they may be at sight-reading (Eaton, 1979).

Although methods for improving functional piano skills are abundant, no system has been widely established as the most effective way to improve the performance skills of group piano students (Kostka, 2000). Researchers have found that certain activities contribute to successful sight-reading such as examining the music prior to playing, more extensive music experience, and students' primary instruments. What the majority of the research illustrates is that functional piano skills can be improved through consistent and guided practice (Kostka, 2000).

### **THE IMPORTANCE OF FUNCTIONAL PIANO SKILLS: GROUP PIANO INSTRUCTORS**

A common subject addressed in group piano research literature is the importance of functional piano skills to school music teachers (Fu, 2008). Group piano and school music teachers have often been asked to rank the importance of functional piano skills to their careers and to describe how frequently they use these piano skills. The disparity between the responses of group piano and school music teachers is surprising. Although most group piano instructors agree that they teach the skills needed by music educators, most public school music teachers do not believe that group piano classes provide them with sufficient training on the skills they use most frequently (Graff, 1985; March, 1988; Redfern, 1983).

Most group piano programs in the United States do not provide separate piano courses to each of the various music majors. For example, there are not group piano courses designed specifically for music education majors. Instead, music majors take courses designed to provide all students with a general introduction to functional piano skill development, regardless of their intended career. Rast (1964) proposed that group piano teachers tailor their classes' curricula to fit the needs of individual degree

programs. Although researchers have requested that group piano courses be tailored to each degree program's needs for the past 60 years, there are still very few programs that offer such specialized instruction (Christensen, 2000; Freeburne, 1952; Graff, 1985; March, 1988; Sonntag, 1980; Spicer, 1992).

Group piano teachers have incorporated the piano skills outlined in various national music organization documents and the piano skills valued by music educators into group piano curricula. Vernazza (1967), for example, examined the value music education students placed on the development of functional piano skills. He examined the group piano course objectives and materials from 38 universities in 19 states, and surveyed music students from group piano programs at those institutions. Vernazza found that music education students valued the development of sight-reading, improvising, harmonizing and transposing melodies. Group piano classes, however, emphasized musicianship, music fundamentals, functional, and technical skills and the teachers of those classes reported using materials that highlighted the importance of functional piano skills. The music students surveyed in this study were aware of the importance of functional piano skills; however they thought their teachers were not providing them with sufficient instruction on the skills they thought they would likely use in the future.

Lyke (1968) examined group piano programs at six state universities in Illinois to determine how effectively group piano classes developed functional piano skills. He collected syllabi, piano proficiency exam information, observed classes, and interviewed group piano faculty to gain a better understanding of the group piano courses offered at these institutions. Lyke also surveyed music educators from areas surrounding the universities to gather information about which functional piano skills they thought were most important. Group piano instructors and music educators agreed on ten piano skills that were important for music education majors: sight-reading, harmonization, playing by

ear, accompanying, critical listening, chord progressions, transposition, technical development, improvisation, and analysis. Goltz (1975) actually found that the same ten functional piano skills were commonly taught by group piano teachers. The music educators surveyed did not think their group piano experiences were helpful in developing improvisation, scales and technique, musical analysis, or reducing vocal and instrumental scores (Lyke, 1968).

Based on his results, Lyke (1968) proposed that universities develop a two-year series of group piano courses that emphasizes the development of functional piano skills so that future music teachers are well prepared to use the piano in their careers. But Fisher (1969) thought music education majors should spend more than two years in group piano classes instead. He believed that by spending more than two years in group piano classes students could develop a solid understanding of how to effectively execute functional piano skills. Like Lyke (1968) and Goltz (1975), Exline (1977) examined the views of group piano teachers regarding the value of functional piano skills to music majors. He distributed a survey to 189 group piano faculty members and found that these group piano teachers valued eight piano skills: sight-reading, developing technique, accompanying, harmonizing melodies, interpreting music, playing repertoire, knowing terms, and improvising. Group piano teachers in this study reported that they taught sight-reading – which they believed was the most important skill – most often. This is another study demonstrating that group piano teachers both teach and value the development of exemplary sight-reading skills, a finding seen consistently in survey research conducted with both group piano instructors and music educators.

Although group piano teachers teach the skills valued by music educators, it is possible that their students are not developing the skills introduced in class to the level required in their intended careers. Hunter (1974) examined whether group piano courses

were adequate in preparing music education majors for the piano skills they would need in the future. Hunter interviewed group piano instructors and surveyed students from 25 private colleges and state universities in the Northwestern region of the United States. He found that group piano classes were effective in training some of the skills needed by music educators. Group piano classes successfully developed sight-reading, technique, critical listening, musical analysis, and playing chord progressions. Students did not think that group piano teachers spent enough time teaching them how to harmonize, accompany, transpose, improvise or play by ear. In fact, some of the group piano teachers in this study questioned whether students were developing their piano skills to the level of proficiency needed to teach their music classes or direct ensembles.

Lowder (1983) distributed a survey to Ohio State University music teaching staff and music teachers from the surrounding area to obtain information about the importance of functional piano skills to group piano teachers and teaching assistants in piano. His questionnaire asked participants to rank the importance of 17 keyboard skills to future music teachers: accompanying, analyzing, playing arpeggios, playing cadences, playing chord progressions, harmonizing, improvising, memorizing, modulating, playing patriotic songs and hymns, playing piano solos, playing by ear, playing scales, reading scores, sight-reading, playing technical exercises, and transposing. Group piano teachers and music educators all agreed that playing cadences, sight-reading, score reading, harmonizing, and accompanying were the most important piano skills, but they disagreed on the exact order of importance. The faculty members and teaching assistants viewed playing cadences as the most important skill, followed by sight-reading, harmonizing, score reading and accompanying, while music teachers valued harmonizing the most, then accompanying, playing cadences, sight-reading and score reading. Because of these findings, Lowder lobbied for changes to occur in the group piano curriculum and

suggested that group piano teachers place a greater emphasis on accompanying, sight-reading open scores and accompaniments, harmonizing melodies, and playing cadences in all 12 keys. Lowder also recommended that group piano teachers remove memorizing piano solos, learning technical exercises, improvising, playing patriotic songs, and playing arpeggios from the group piano curriculum so that undergraduate music majors focus on the skills that they would need in their future careers.

McDonald (1989) surveyed group piano teachers from 449 NASM institutions to gather information about their class piano curricula. Respondents emphasized harmonizing melodies, playing chord progressions, transposing, ear training, sight-reading, and accompanying. Choral and instrumental score reading, playing modulations, improvising, and playing ensemble repertoire received a moderate amount of attention and group piano teachers placed very little emphasis on realizing figured bass, playing by ear, and playing popular music. This is one of the first studies that demonstrated a shift in the curriculum of group piano classes from the early group piano classes that emphasized the learning of standard piano literature toward a focus on the development of functional piano skills. More emphasis was being placed on the skills described as important by the teachers in Lowder (1983), Hunter (1974), and Lyke (1968) rather than simply learning how to play scales and learn piano repertoire.

Although many researchers have proposed changes to the group piano curricula, many institutions have not implemented the changes called for by Lowder (1983), Hunter (1974), Lyke (1968), or NASM and MENC. While most undergraduate institutions follow the guidelines set forth by NASM, the descriptions of courses “seem to indicate that they really have not made the transition from piano programs designed to prepare performers to those designed to prepare public school music teachers” (Sonntag, 1980, p. 75).

## **THE USE AND IMPORTANCE OF FUNCTIONAL PIANO SKILLS TO SCHOOL MUSIC EDUCATORS**

Whereas many researchers have gathered information about the importance of functional piano skills to group piano teachers, many others have examined how functional piano skills are used by current school music educators. Most researchers have used questionnaires to collect information about the use and value of functional piano skills by school music educators. One of the first questionnaires distributed to music teachers was created by Freeburne in the 1950s. He wanted to determine which piano skills 202 public school music teachers in the Northeastern United States used most often (1952). He found that music teachers sight-read, harmonized, accompanied, and improvised simple accompaniments most often. Freeburne also found that the amount of time music teachers spent at the piano varied by discipline; choral teachers used the piano more often during rehearsals than their instrumental counterparts. The majority of the teachers surveyed wished that their undergraduate piano classes had provided them with preparation on the piano skills they used in their teaching. Freeburne recommended that group piano teachers tailor their instruction to meet the needs of future music educators. He thought that with a more tailored approach to group piano instruction, music majors would be more prepared to use the piano skills introduced in group classes.

Freeburne's (1952) finding that choral music teachers spent more time at the piano than their instrumental counterparts led Capoccioni (1968) to examine the use of piano skills by choral directors more closely. Capoccioni surveyed 260 junior and high school choir directors and asked them to rank the importance of 16 piano skills. The findings show that the most important piano skills were: (1) playing multiple parts for a rehearsal, (2) direct and accompany a rehearsal, (3) accompany small ensembles and soloists, (4) re-voice or rearrange parts, (5) play vocal parts and sketch an

accompaniment, (6) supply accompaniments given chord symbols/letters, (7) direct and accompany a performance, (8) use the art of transposition, (9) play accompaniments to popular songs, (10) supply accompaniments without chord symbols/letters, (11) accompany in a transposed key, (12) develop harmony lines to popular melodies, (13) arrange accompaniments, (14) transpose an accompaniment at sight, (15) transpose voice parts, and (16) play by ear (Capoccioni, 1968, p. 13). Capoccioni's study identified the skills needed by choral music educators; however, the study was limited to choral conductors from a single state. It is possible that the skills they were taught, and therefore valued, were a result of their own music training.

Rather than studying the value of functional piano skills to music educators, Graff (1985) investigated the effectiveness of music educators' collegiate piano training. She examined 13 group piano textbooks and proficiency requirements at Plymouth State College as well as surveyed 79 music educators in the Northeastern portion of the United States to determine how well group piano classes prepared them to use functional piano skills. Music teachers found little relationship between the skills introduced in group piano classes and the piano skills they used most often in their careers. Music teachers valued the ability to play chord progressions, devise modulations, realize figured bass, harmonize, transpose, analyze music, improvise, play by ear, listen critically, sight-read, read open scores, play patriotic songs, play piano literature, memorize piano repertoire, develop fluent piano technique, accompany, and play in ensembles. After reviewing the 13 piano textbooks, Graff found that these textbooks provided training on all of the piano skills valued by music educators, although not to the level needed by in-service music teachers. Graff recommended that group piano classes teach the skills used by music educators and introduce those piano skills in a way that demonstrates how they could be used in the future.

When asked to evaluate their group piano experience, many teachers expressed dissatisfaction with the preparation they received in group piano class to use the piano as a teaching tool (Buchanan, 1964; Christensen, 2000; Graff, 1985; Lyke, 1969; McWhirter, 2006). Although many researchers have demonstrated the ineffectiveness of group piano programs in preparing students to use the piano in their careers, the results of two studies showed that group piano programs indeed taught the piano skills needed by music educators (Corbett, 1977; Wells, 1986). Corbett surveyed music teachers at all levels in Kansas to determine the skills that were most important to their teaching and found that elementary school teachers reported that their group piano classes were effective in developing the piano skills they needed. Other music teaching disciplines did not report the same level of satisfaction with their group piano classes. For example, high school choral directors were more dissatisfied with their collegiate piano training than elementary music teachers. Corbett's study did not address specific functional piano skills; rather the questionnaire asked music teachers to describe if they used the piano skills taught in group piano courses and whether or not they thought piano skills were important to their teaching.

Wells (1986) examined the proficiency requirements at 28 universities and colleges in North Carolina and distributed a survey to 182 public school music educators about the importance and use of functional piano skills. Thirty-three percent of participants thought that twelve skills that were consistently used to test students' piano proficiency (harmonizing, sight-reading, playing scales, learning piano literature, transposing, accompanying, hymn playing, playing chord progressions, playing arpeggios, playing chords, learning patriotic songs, and reading open-scores) were important to their career. These results show that the piano skills tested in university piano proficiency exams were the skills important to public school music teachers.



Neither Wells (1986) nor Corbett (1977) required music educators to evaluate their own playing ability or describe their own piano skills. It is possible that music educators use the piano often, but still wished they were more proficient at the piano.

March (1988) examined how the piano skills typically included on group piano proficiencies were valued by 60 public school music teachers in Oregon. She found that of all the skills tested in group piano proficiencies, teachers valued the learning of standard piano literature the least. Also, depending on the teacher's specialization, some piano skills were more greatly valued than other skills. Choral music teachers valued sight-reading and vocal score reading more than instrumental teachers. Conversely, instrumental teachers valued transposition and instrumental score reading most. Although several studies have cited differences between the skills used by various teaching disciplines, very few group piano programs tailor instruction to students' intended degree program (Freeburne, 1952; Graff, 1985; Spicer, 1992). Rarely would you find a university that offers group piano classes for music education majors or music performance majors. Perhaps this is because no information is currently available on the piano skills used by professional musicians who do not teach in the public school system.

Christensen (2000) surveyed 472 general, choir, band, and orchestra teachers from across the United States to determine the importance of functional piano skills to each music teaching discipline. She believed that music educators would use the piano more often if they were more proficient. She found that although the majority of teachers believed that piano study is important, band directors used the piano least in their teaching and choral directors used it the most. This result supports previous research who found that choral teachers used the piano more often than instrumental teachers (Freeburne, 1952; March, 1988). The skills used most often varied by teaching discipline; orchestra and band directors used score reading and accompanying most, while

elementary music teachers used harmonization more than any other piano skill. Elementary teachers were the only teachers that felt adequately prepared to use the piano in their teaching. Perhaps elementary teachers thought their piano training was adequate because they used harmonization primarily and Lyke (1968) found that harmonization skills were effectively taught in group piano classes.

Christensen (2000) also found that teachers would use the piano more often in rehearsals or classes if they were more proficient at the piano. All choral respondents would have harmonized simple melodies to accompany their own ensembles and 90% would have accompanied their own ensembles if they were more proficient. This information suggests that group piano classes could prepare future music educators more effectively than they currently do. Music educators at all levels value proficient piano skills so group piano instructors should emphasize the piano skills valued most by music educators, so that music teachers are prepared to use the piano in their careers.

Because many researchers have found that choral directors need exemplary piano skills (Capoccioni, 1968; Christensen, 2000; Freeburne, 1952; Koozer, 1987; Stegman, 1996), McWhirter (2006) examined the use of functional piano skills by choral music educators more closely. She distributed a survey to 219 choral educators in the Midwest and found that they used the piano for warm-ups and sight-read accompaniments most often (McWhirter, 2006). Although most directors used an accompanist, teachers still used the piano daily. More than 75% of the educators surveyed stated that they did not use the piano outside of the classroom, but would have if they were more proficient.

In addition to the information McWhirter (2006) gathered on the use of piano skills by choral teachers, she asked participants to report on the level of piano proficiency of their student interns. She found that 78% of choral educators rated their student teachers' piano skills to be somewhat or not adequate and that music education majors

should focus on reading single vocal lines, leading warm-ups, reading from an open score, sight-reading simple accompaniments, playing four-part progressions, and singing one part while playing one or more different parts. Many of the educators reported that they had been taught those skills in their group piano classes, but for most of them two years elapsed between their group piano classes and their student teaching.

The gap of time that occurs between the piano proficiency exam and students' teaching internship hinders the retention of students' piano skills (Hines, 1995). Students have found it difficult to maintain their piano skills throughout their undergraduate career. The skills often identified as most important to music teachers – accompanying and score reading – were the skills that have suffered the most from this lapse of time (Mauricio, 2009). After a period of six months, graduates of group piano programs forgot many of the skills they had previously acquired (Mauricio, 2009). This period of time between the completion of group piano classes and students' teaching internships may impact music teachers' inability to play the piano effectively in their teaching. Perhaps group piano programs could be moved to the last two years in the undergraduate music program. An alternative solution was proposed by Fisher (1969) who thought that group piano programs should not be moved, but should be lengthened.

It is clear from the extensive studies conducted with music educators that they value the ability to play from an open score, harmonize a warm-up, or accompany their ensemble during a rehearsal. Although teachers have often complained about their lack of preparation on the piano skills they use in their teaching, very few changes have been made to group piano programs. Rarely have group piano researchers found that music teachers consistently use the skills emphasized in group piano classes or that the teachers are satisfied with the level of preparation received in group piano courses. If the intention of group piano instruction is to supply music majors with the ability to harmonize

melodies, improvise simple accompaniments, and sight-read hymn tunes, then the curriculum needs to reflect these skills. The research available on the use of functional piano skills does not address the needs of music faculty members, performing musicians, or private music instructors.

## **MUSIC CAREERS**

While many undergraduate music majors become school music teachers, others become performers, music faculty members, or teach music privately. Music students may have to assemble a career by teaching private lessons, playing in an ensemble, and perhaps acquire another position outside of the music field to meet their financial needs (Mills, 2004). Mills interviewed 27 university-affiliated music preparatory school teachers to determine why they entered the field of teaching. The instructors enjoyed working with students and their position at the school allowed them to engage in a number of different pursuits. Some teachers taught music exclusively, whereas the majority performed a variety of tasks such as teaching, performing in ensembles, and playing gigs to supplement their income.

Most music majors, regardless of their discipline, expect to teach privately after they graduate (Fredrickson, 2007a; Grausam, 2006). They believe that teaching privately will enhance their own performing, provide an opportunity to watch young musicians grow, or supplement their income. Generally, private music instructors do not receive the extensive training in educational psychology or pedagogy of public school music teachers (Fredrickson, 2007b). Fredrickson (2007a; 2007b) examined the pedagogy training that music majors received and found that music majors did not receive courses in pedagogy or educational psychology like music education majors. Instead their studies focused on developing exemplary performing capabilities. Fredrickson who also asked music majors to expound on whether they expected to teach music privately after graduation found that

an overwhelming majority of students expected to teach music privately. The lack of training, both in pedagogy and perhaps in the piano skills necessary to teach music effectively, could negatively impact music majors' success as private teachers.

#### **PURPOSE OF THE STUDY**

Much research has been conducted on the importance of functional piano skills to music educators. However there is no information about the use and value of piano skills by other professional musicians, such as faculty members, performers, and private music teachers. Do performing musicians value sight-reading, accompanying, harmonizing, and improvising to the same degree as music teachers? Do music faculty members and private music instructors use the functional piano skills taught in group piano classes? What functional piano skills do they use? Do they use the piano frequently in their careers? How did they gain the piano skills they possess?

The national music organization documents delineate the skills needed by school music teachers, but do not describe the skills needed by other professional musicians (MENC, 1945; NASM, 1953; NASM, 2009). The purpose of this study is to determine which functional piano skills performing musicians, private music instructors, and university-level music faculty members use most often. A secondary purpose of this study is to gather information about where these musicians gained their piano skills and how effectively university group piano programs prepared these musicians to use the piano in their careers.

### **III. Methodology**

The purpose of this study was twofold: to gather information about (1) how often professional musicians use functional piano skills and (2) the effectiveness of university piano programs in preparing professional musicians to use the piano in their careers. I developed an online questionnaire and distributed it to a variety of professional musicians from different states.

#### **QUESTIONNAIRE**

When constructing the questionnaire, I chose a variety of question formats such as Likert-scales, open-ended responses, rating scales, and checklists to gather information about musicians' personal characteristics, piano training, and the use of functional piano skills in their careers. The questionnaire was divided into six sections: informed consent, demographic information (gender, professional responsibilities, years of experience, and highest level of completed education), piano training, current piano use, undergraduate music major preparation, and comments (see Appendix A). The questionnaire consisted of 19 questions; some of which had multiple components.

I included questions that closely resembled those used in previous surveys completed with music educators to allow for clear comparisons across studies (Christenson, 2000; McWhirter, 2006). I did, however, make adjustments to the wording of the questions and the types of responses provided to better fit the population I surveyed. For example, in the section regarding musicians' current use of functional piano skills, I chose to provide three categories (regularly, occasionally, or never), rather than the five categories used in previous surveys with public school music teachers (daily, frequently, occasionally, rarely, or never).

## **PILOT STUDY**

I tested the survey with graduate students in Music and Human Learning and Music Theory from the University of Texas at Austin. I sent a cover letter (see Appendix B) by email to ten graduate students with information about the on-line survey. All subjects completed the survey.

Pilot study participants were asked to provide comments about the wording of questions and readability. I studied the comments they provided and modified the questions to address their concerns. I made a few questions more inclusive, fixed typing mistakes, and deleted irrelevant and distracting information.

## **MAIN STUDY: PARTICIPANTS AND PROCEDURES**

I chose to survey university-level faculty members, performers, and private music instructors because no other researcher had addressed the piano skills used by these musicians. Faculty members from music departments at four universities and colleges were invited to participate in the study. I sent them a cover letter by email (Appendix B) which explained the purpose of the study, provided a link to the online survey, and supplied them with my contact information should they need to communicate directly with me. I selected institutions of different sizes and types: the University of Texas at Austin, Bowling Green State University, Luther College, and Concordia University in Austin. Descriptive information for the four schools is included in Table 1.

Table 1. Descriptive Information of Universities and Colleges Surveyed

	University of Texas-Austin	Bowling Green State University	Luther College	Concordia University in Austin
Size (students)	+ 50,000	20,000	2,500	2,000
Public/Private	Public	Public	Private	Private
Music Major?	Yes	Yes	Yes	Yes
Students in Music Major	700	550	350	<100
Music Faculty Members	99	74	54	7

I also invited performing musicians to participate in the study. I contacted musicians from large ensembles from two metropolitan areas: Austin, TX and Minneapolis/St. Paul, MN. The performing ensembles from Austin, TX included the Austin Symphony Orchestra and the Austin Lyric Opera. The performing ensembles surveyed from Minneapolis/St. Paul, MN were the Minnesota Opera and the St. Paul Chamber Orchestra.

Finally, I also contacted by email, private music instructors working at four pre-college music schools: the Armstrong Community Music School, the University of Texas String Project, the Central Minnesota Music School, and the MacPhail Center for Music.

In total, I sent out 393 surveys. Descriptive information about participants is included in Tables 2, 3, and 4. Participants were asked to complete the survey within three weeks of receiving the invitation. They were mailed a paper copy of the survey with a self-addressed, stamped envelope if they so requested. Two weeks after I emailed the



cover letter, only 52 (13.2%) musicians had completed the questionnaire. I sent a reminder by email to participants to solicit additional responses (Appendix C).

Table 2. Descriptive Information of Music Faculty Members

	University of Texas-Austin	Bowling Green State University	Luther College	Concordia University in Austin
Male	71	45	33	1
Female	27	29	21	6
Total	99	74	54	7

Table 3. Descriptive Information of Performers

	Austin Symphony	Austin Lyric Opera	Minnesota Opera	St. Paul Chamber Orchestra
Male	22	2	3	19
Female	19	5	4	19
Total	41	7	7	38

Table 4. Descriptive Information of Private Music Teachers

	Armstrong Community Music School	University of Texas String Project	MacPhail Center for Music	Central Minnesota Music School
Male	4	3	12	5
Female	7	5	21	9
Total	11	8	33	14

One week after I sent the reminder by email, I received 47 responses (25.2%). Due to the low response rate (25%), I decided to contact individuals from each institution by email to solicit additional responses. Ten days after I sent the second reminder, I received an additional 27 responses for a total of 122 responses (31%). Thirteen surveys were incomplete, and therefore excluded from data analysis.

### **SURVEY RETURNS**

In summary, I emailed 393 questionnaires to university music faculty members, performing musicians, and private music instructors. The data collection process yielded 109 completed surveys for a return rate of 27.7%. In total, 53 participants were male (48%) and 56 female (52%).

I examined the responses to the question which asked participants to describe their current involvement in the music profession and found that many respondents engaged in more than one musical profession. This is in accord with Mills (2004) and Bennett (2009) who found that most musicians engage in many different musical activities. In this study, 43 participants were faculty members, 18 participants were performers, and 7 were teachers. Twenty-one participants indicated that they performed professionally and taught pre-college music students, 14 respondents indicated that they performed professionally and were employed as music faculty members, and 6 participants were music faculty members, professional performers, and private music instructors. Participants who identified themselves as music faculty members only ( $n = 43$ ), were categorized as faculty members for the rest of the analyses. The teacher category ( $n = 28$ ) included respondents who identified themselves as teachers at non-university levels regardless of whether they performed professionally. The performer category ( $n = 38$ ), included all individuals, other than teachers, who reported performance

as one of their professional activities. These three categories (faculty, performers, and teachers) were used in the subsequent analyses.

I analyzed the information gathered by the online questionnaire using descriptive statistics and proportions. I analyzed the responses of the three groups separately (faculty, performers, and teachers) to determine if the three groups used the piano differently.

## IV. Results

The purpose of this study was to gather information about the use of piano skills by professional musicians and how they acquired these functional skills. An on-line questionnaire was distributed to music faculty members, performers, and teachers from institutions of different sizes and from different cities. In total, 109 musicians completed the questionnaire.

Descriptive information about music faculty members ( $n = 43$ ), performing musicians ( $n = 38$ ), and private music teachers ( $n = 28$ ) is presented first in the chapter. The questionnaire consisted of five sections in addition to the informed consent component: demographic information (questions 1 to 7), piano training (questions 8 to 12), functional piano skill use (questions 13 to 15), proposed undergraduate training (questions 16 and 17), and comments (questions 18 and 19). Their responses to each of the 19 questions are discussed individually.

### *1. Are you male or female?*

Table 5 provides a detailed breakdown of responses by sex. More male faculty members and performers completed the survey than did female faculty members and performers, whereas more female teachers completed the survey than did male teachers.

Table 5: Proportion of Male and Female Music Faculty, Performers, and Teachers

Sex	Faculty ( $n = 43$ )	Performers ( $n = 38$ )	Teachers ( $n = 28$ )
Male	53%	55%	32%
Female	47%	45%	68%

**2. What is your highest level of completed education?**

Table 6 shows participants' highest level of completed education. The majority of music faculty participants had earned a doctorate in music and most teachers and performers earned a masters degree in music.

Table 6: Degrees Earned by Music Faculty, Performers, and Teachers

Degree	Faculty ( <i>n</i> = 43)	Performers ( <i>n</i> = 38)	Teachers ( <i>n</i> = 28)
Doctorate	84%	32%	21%
Masters	16%	47%	46%
Bachelors	0%	21%	29%
High School	0%	0%	4%

**3. In what areas have you completed degrees?**

Most participants, regardless of their career, had earned degrees in performance, musicology, music theory, or composition. Others completed degrees in music education or conducting and few participants earned degrees in fields outside of music (e.g. psychology, physics, and library science). Table 7 provides information about participants' music degrees.

Table 7: Degree Programs Completed by Music Faculty, Performers, and Teachers

	Faculty ( <i>n</i> = 69)	Performers ( <i>n</i> = 47)	Teachers ( <i>n</i> = 38)
Musicology/Theory	32%	30%	32%
Conducting/Music Ed	22%	15%	21%
Performance	38%	40%	37%
Other	9%	15%	11%

**4. Please describe your current involvement in the music profession.**

Participants' answers to this question were categorized as music faculty, performers, or teachers. If they were a music faculty member exclusively, then they were categorized as faculty (*n* = 43). If they taught music to precollege students only or taught music to precollege students and performed professionally, then they were identified as teachers (*n* = 28). All other participants were categorized as performers (*n* = 38).

**5. How many years have you been at your current position?**

Participants reported the number of years they had been at their current position. Means for the three groups (faculty, performers, and teachers) are displayed in Table 8. To examine participants' years of experience more closely, I completed a one-way ANOVA [between subjects-factor: group (faculty, performers, and teachers); within-subjects factor (years of experience)]. There were no differences in the number of years that the three groups of participants had been at their current position ( $F = 0.03$ ,  $df = 105$ ,  $p > 0.05$ ).

Table 8: Means and Standard Deviations for Years of Experience of Faculty, Performers, and Teachers

	<i>M</i>	<i>SD</i>
Faculty ( <i>n</i> = 43)	15.1	11.68
Performers ( <i>n</i> = 38)	15.18	13.47
Teachers ( <i>n</i> = 28)	14.54	11.41

**6. In which of the following music activities do you engage regularly?**

Participants identified all the activities in which they engaged regularly from the following list: teach lessons to precollege students, teach lessons to college students, teach group classes to precollege students, teach group classes to college students, perform as a soloist, perform in an ensemble, or other (see Table 9). Those who selected the “other” category were asked to specify the activity.

The activities that most faculty members performed regularly were teaching lessons to college students, teaching group classes to college-age students, and performing as a soloist. Most performers indicated that they performed in an ensemble or taught lessons to college students, whereas most teachers reported teaching lessons to precollege and college students and performing in ensembles.

Twice as many teachers taught precollege piano lessons and precollege group classes regularly than did faculty, but twice as many faculty members and performers taught private lessons to college students frequently than did teachers. The results also show that twice as many faculty members regularly taught classes to college students than did the other participants. The six participants who reported engagement in other activities either composed or taught music therapy regularly.

Table 9: Activities Performed Regularly by Faculty, Performers, and Teachers

Activities	Faculty ( <i>n</i> = 99)	Performers ( <i>n</i> = 114)	Teachers ( <i>n</i> = 84)
Precollege Lessons	11%	14%	26%
College Lessons	22%	20%	8%
Precollege Classes	4%	4%	17%
College Classes	26%	13%	6%
Soloist	20%	19%	13%
Ensemble	15%	27%	27%
Other	1%	3%	2%

**7. If you teach music regularly, please indicate your primary teaching area.**

Participants could select any one or as many as applicable of the following primary teaching areas: music history, individual lessons, classes for non-music majors, conducting, music theory, composition, group piano classes, nonpiano group courses, other, or they could select not applicable if they did not teach regularly. That only 5% of participants selected not applicable suggests that the majority of participants engaged in teaching at some level (see Table 10). It is worth mentioning that all the participants who did not teach regularly (*n* = 7) were performers. The most common teaching area for all groups was teaching private lessons. Music theory was also a common teaching specialization for faculty members and teachers. Additionally, many teachers taught group lessons or classes to precollege students. The four participants who selected “other” for their teaching specialty reported teaching music technology or recording engineering.



Table 10: Teaching Responsibilities of Faculty, Performers, and Teachers

Teaching Area	Faculty ( <i>n</i> = 66)	Performers ( <i>n</i> = 41)	Teachers ( <i>n</i> = 39)
Not Applicable	0%	17%	0%
History	9%	5%	0%
Lessons	30%	56%	54%
Non-Music Majors	5%	0%	0%
Conducting	12%	15%	3%
Music Theory	18%	5%	10%
Composition	5%	2%	5%
Group Piano	3%	0%	3%
Group Classes	14%	0%	24%
Other	5%	0%	3%

**8. *Were you required to pass a piano proficiency exam during your musical studies?***

Participants selected yes, no, or unsure if they did not remember whether or not they were required to pass a proficiency exam during their music studies. The majority of respondents, regardless of the group to which they belonged, were required to pass a piano proficiency exam (see Table 11).

Table 11: Proficiency Requirements for Faculty, Performers, and Teachers

Proficiency	Faculty ( <i>n</i> = 43)	Performers ( <i>n</i> = 38)	Teachers ( <i>n</i> = 28)
Yes	86%	71%	79%
No	14%	24%	21%
Unsure	0%	5%	0%

**9. When did you fulfill a piano requirement?**

Participants were asked whether they were required to fulfill a piano requirement during their bachelors, masters, artist diploma/performance certificate, doctorate degrees. Regardless of the group to which they belonged, the majority of participants reported a piano requirement during their undergraduate studies (see Table 12). Some participants also had a piano requirement during their masters' degree.

Table 12: Degree Programs in Which Faculty, Performers, and Teachers had Proficiency Requirements

Degree Program	Faculty ( <i>n</i> = 60)	Performers ( <i>n</i> = 46)	Teachers ( <i>n</i> = 31)
Bachelors	63%	67%	81%
Masters	18%	20%	10%
Performance Cert.	5%	0%	0%
Doctorate	13%	2%	0%
Not Required	0%	11%	10%

**10. How much piano training did you receive before you entered college?**

Participants provided the number of years spent in piano lessons and group piano classes before they went to college: 0 years, 1-3 years, 4-6 years, 7-10 years, or 11 or more years. Most participants took piano lessons, but did not take group piano classes before they entered college (see Table 13). Eight faculty members and eight teachers had taken piano lessons for more than 11 years.

Table 13: Years of Individual and Group Piano Lessons Received by Faculty, Performers, and Teachers Prior to College

Years	Faculty ( <i>n</i> = 43)		Performers ( <i>n</i> = 38)		Teachers ( <i>n</i> = 28)	
	Individual	Group	Individual	Group	Individual	Group
0 years	21%	88%	14%	95%	11%	93%
1-3 years	19%	7%	24%	5%	25%	4%
4-6 years	14%	2%	22%	0%	21%	0%
7-10 years	28%	0%	32%	0%	14%	4%
11+ years	19%	2%	8%	0%	29%	0%

**11. What piano training did you receive during college?**

Participants reported the number of semesters they took piano lessons and group piano classes during college. They could also select Not Applicable if the piano requirement was waived during their studies. Six faculty members, four performers, and three teachers were exempt from their piano requirement. The average number of semesters that participants took piano lessons and group piano classes are displayed in Table 14. The results of an ANOVA for group (faculty, performers, and teachers) on the number of semesters of piano lessons (within-subjects factor) showed no differences ( $F =$

1.8,  $df = 105$ ,  $p > .05$ ) among the groups. I also completed an ANOVA on the number of semesters spent in group piano classes between the three groups [between-subjects factor: group (faculty, performers, and teachers); within-subjects factor: number of semesters]. The results showed no differences among the three groups in the number of semesters of group piano classes ( $F = 0.14$ ,  $df = 105$ ,  $p > .05$ ).

Table 14: Means and Standard Deviations for Semesters Spent in Piano Lessons and Group Piano Classes for Faculty, Performers, and Teachers During College

Class	Faculty ( $n = 43$ )		Performers ( $n = 38$ )		Teachers ( $n = 28$ )	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Lessons	5.33	3.83	3.59	3.13	3.96	4.5
Group Classes	3.26	2.31	1.56	1.79	1.58	1.88

### 12. Where did you learn the following piano skills?

Participants selected the course or courses in which they learned 12 selected piano skills that are listed in Tables 15a and 15b. They could also select “never taught skill” if they learned the skill on their own or never learned it. Table 15a displays the proportion of all participants and Table 15b displays the proportion of faculty, performers, and teachers who learned the 12 skills in piano lessons, group piano classes, other classes, or who were never taught the skills. Regardless of the group to which they belonged, most participants reported three skills that were commonly learned in piano lessons: sight-reading, scales, and technique. Accompanying, transposing accompaniments, improvising melodies, and improvising with chords were the skills that most participants were never taught. Participants learned how to harmonize with roman numerals in both group piano and other courses, but most participants learned how to play chord progressions in

courses other than group piano. The majority of participants learned how to read open scores in other classes and on their own.

Table 15a: Percentage of Participants Who Learned Piano Skills in Lessons, Group Piano Class (GP), Other Classes (OC), or Never Taught

Skills	Lessons	GP	OC	Never
Sight-Reading	47%	23%	13%	18%
Open Score Reading	13%	18%	35%	34%
Accompanying	24%	13%	17%	46%
Transposing Melodies	17%	26%	32%	25%
Transposing Accomp.	11%	17%	22%	50%
Improvising Melodies	10%	13%	52%	53%
Improvising with Chords	12%	23%	26%	39%
Harmonizing with I, IV, V7	18%	30%	37%	16%
Harmonizing with C7, Am, F	14%	25%	32%	30%
Chord Progressions	28%	20%	44%	8%
Scales	67%	23%	8%	2%
Technique	77%	17%	4%	3%

*Note.* GP = Group piano classes, OC = Other Classes, Never = never taught skill.

Table 15b: Proportion of Faculty, Performers, and Teachers Who Learned Piano Skills in Lessons, Group Piano Class (GP), Other Classes (OC), or Never Taught

Skills	Lessons			GP			OC			Never		
	F	P	T	F	P	T	F	P	T	F	P	T
Sight-Reading	43%	43%	58%	21%	28%	19%	17%	5%	16%	19%	25%	6%
Open Score Reading	13%	16%	8%	19%	19%	15%	34%	32%	42%	34%	32%	35%
Accompanying	26%	19%	28%	7%	14%	21%	21%	17%	10%	47%	50%	41%
Transposing Melodies	18%	11%	24%	27%	26%	24%	25%	34%	38%	30%	29%	14%
Transposing Accomp.	12%	3%	23%	12%	22%	19%	28%	19%	15%	49%	56%	42%
Improvising Melodies	12%	8%	8%	16%	11%	12%	14%	28%	35%	58%	53%	46%
Improvising with Chords	14%	8%	16%	26%	24%	16%	19%	21%	44%	40%	47%	24%
Harmonizing with I, IV, V7	18%	13%	22%	34%	24%	31%	30%	39%	44%	18%	24%	3%
Harmonizing with C7, Am, F	14%	11%	17%	30%	18%	27%	23%	34%	40%	33%	37%	17%
Chord Progressions	24%	24%	39%	27%	15%	16%	41%	46%	45%	8%	15%	0%
Scales	64%	67%	71%	23%	21%	26%	11%	9%	3%	2%	2%	0%
Technique	78%	73%	81%	11%	22%	19%	7%	2%	0%	4%	2%	0%

*Note.* GP = Group piano classes, OC = Other Classes, Never = never taught skill.

Twice as many faculty members and performers than teachers reported that they were never taught how to sight-read, transpose melodies, improvise melodies, and harmonize melodies on their own. More teachers reported learning how to improvise with chords, improvise melodies, and sight-read in other classes than did other participants. Fewer faculty members responded that they learned how to accompany in group piano classes than did other participants and more teachers learned how to improvise with

chords and transpose accompaniments and melodies in piano lessons than did other respondents.

### **Functional Piano Skill Use**

In this section, participants indicated how frequently they used the following 19 piano skills: harmonize melodies using letter symbols, harmonize melodies at sight without aid of symbols, improvise accompaniments, transpose simple melodies, transpose simple accompaniments, transpose instrumental parts to concert pitch, sight-read instrumental or vocal open scores, sight-read accompaniments, sight-read alto or tenor clef parts, play familiar songs by ear using simple chords and accompaniments, play rehearsed piano solos, play memorized piano solos, play chord progressions with four-part voicing, devise modulations, play scales and arpeggios, arrange an existing vocal or instrumental piece, compose a new vocal or instrumental piece, accompany a soloist, and accompany an ensemble. They were also asked how adequately their collegiate piano training prepared them to use those 19 skills. I will describe the answers to the frequency question first and then the answers to the adequacy of their collegiate piano training

Participants reported whether they used the skills regularly, occasionally, or never. Most faculty members sight-read accompaniments, played scales and arpeggios, and played familiar songs by ear regularly (see Tables 16a and 16b) whereas performers sight-read accompaniments, transposed accompaniments, harmonized melodies with symbols regularly. On the other hand, the majority of teachers reported playing scales, reading open scores, and transposing simple melodies regularly.

Table 16a: Frequency With Which Participants Used Functional Piano Skills

Skills	Regularly	Occasionally	Never
Harmonize Melodies with Symbols	27%	35%	38%
Harmonize Melodies without Symbols	21%	36%	43%
Improvise Accompaniments	22%	32%	46%
Transpose Melodies	34%	37%	29%
Transpose Accompaniments	29%	37%	34%
Transpose Instruments	16%	31%	53%
Open Score	26%	38%	36%
Sight-Reading Accompaniments	46%	26%	29%
Alto Clef	17%	41%	42%
Play by Ear	30%	32%	38%
Practice Solos	18%	29%	53%
Memorize Solos	14%	25%	61%
4-Part Chord Progressions	24%	27%	49%
Modulations	13%	31%	56%
Scales	36%	35%	29%
Arrange Pieces	18%	47%	35%
Compose	9%	35%	56%
Accompany Solos	32%	31%	37%
Accompany Groups	17%	24%	59%

*Note.*  $N = 108$ .



Table 16b: Frequency with which Faculty, Performers, and Teachers Used Functional Piano Skills

Skills	Regularly			Occasionally			Never		
	F	P	T	F	P	T	F	P	T
Harmonize Melodies with Symbols	28%	32%	18%	42%	27%	36%	30%	41%	46%
Harmonize Melodies without Symbols	26%	22%	14%	44%	32%	29%	30%	46%	57%
Improvise Accompaniments	21%	24%	21%	36%	30%	29%	43%	46%	50%
Transpose Melodies	37%	31%	32%	47%	31%	29%	16%	37%	39%
Transpose Accompaniments	24%	34%	31%	50%	14%	44%	26%	51%	25%
Transpose Instruments	19%	14%	15%	42%	28%	19%	40%	58%	67%
Open Score	26%	22%	32%	51%	42%	14%	23%	36%	54%
Sight-Reading Accompaniments	57%	43%	32%	14%	29%	39%	29%	29%	29%
Alto Clef	16%	17%	18%	40%	46%	36%	44%	37%	46%
Play by Ear	47%	17%	21%	21%	46%	32%	33%	37%	46%
Practice Solos	21%	11%	21%	33%	34%	18%	47%	54%	61%
Memorize Solos	19%	9%	14%	26%	20%	29%	56%	71%	57%
4-part Chord Progressions	37%	14%	14%	33%	29%	18%	30%	57%	68%
Modulations	16%	14%	7%	37%	34%	18%	47%	51%	75%
Scales	40%	31%	36%	35%	37%	32%	26%	31%	32%
Arrange Pieces	12%	32%	11%	57%	35%	46%	31%	32%	43%
Compose	9%	11%	7%	35%	43%	25%	56%	46%	68%
Accompany Solos	37%	31%	25%	26%	29%	43%	37%	40%	32%
Accompany Groups	16%	17%	18%	30%	23%	14%	53%	60%	68%

Note.  $N = 108$ , F ( $n = 43$ ), P ( $n = 38$ ), and T ( $n = 28$ ).

There were a number of piano skills that the majority of participants never used: improvise accompaniments, practice piano solos, play memorized solos, devise modulations, compose new pieces, and accompany groups. Many more performers and teachers reported that they never transposed melodies than did faculty members, and more performers reported never transposing accompaniments than did other participants.

Both playing by ear and playing chord progressions in four-part voicing were skills that twice as many faculty members than other participants reported using regularly. More performers reported arranging pieces regularly than did either faculty members or teachers.

In addition to providing information about the frequency with which they used the 19 selected functional piano skills, participants described their training as very adequate, somewhat adequate, inadequate, or not applicable in preparing them to use these skills. They were instructed to select not applicable if they received training on a piano skill in piano lessons taken prior to college, developed it in classes other than college-level classes, or they developed the skill after college. A large proportion of faculty members, performers, and teachers selected not applicable for many of the 19 piano skills (i.e. composing pieces, accompanying groups, harmonizing melodies with symbols, and improvising accompaniments). Very few participants indicated that their collegiate piano training was very adequate in developing the piano skills they used most frequently (see Tables 17a and 17b). Playing piano solos and playing scales were the only piano skills that more than 30% of all participants thought were very adequately taught in college piano classes.

Table 17a: Adequacy of Participants' Collegiate Piano Training on Functional Piano Skills

Skills	Very Adequate	Somewhat Adequate	Inadequate	Not Applicable
Harmonize Melodies w/ Symbols	10%	35%	15%	39%
Harmonize Melodies w/o Symbols	11%	22%	27%	40%
Improvise Accompaniments	9%	15%	28%	49%
Transpose Melodies	20%	34%	9%	37%
Transpose Accompaniments	11%	26%	24%	39%
Transpose Instruments	14%	26%	24%	39%
Open Scores	14%	28%	22%	36%
Sight-Reading Accomp.	21%	22%	17%	41%
Alto Clef	13%	27%	18%	42%
Playing by Ear	9%	25%	25%	42%
Playing Solos	38%	17%	2%	43%
Memorize Solos	31%	22%	6%	40%
4-Part Chord Progressions	16%	30%	18%	35%
Modulations	11%	18%	25%	46%
Scales	44%	22%	8%	27%
Arrange Pieces	13%	27%	15%	45%
Compose Pieces	13%	21%	18%	48%
Accompany Solos	22%	25%	16%	37%
Accompany Groups	16%	22%	17%	45%

*Note.*  $N = 97$ .

Table 17b: Adequacy of Faculty Members', Performers', and Teachers' Collegiate Piano Training on Functional Piano Skills

Skills	Very Adequate			Somewhat Adequate			Inadequate			Not Applicable		
	F	P	T	F	P	T	F	P	T	F	P	T
Harmonize Melodies w/ Symbols	13%	9%	8%	28%	31%	50%	21%	9%	15%	38%	50%	27%
Harmonize Melodies w/o Symbols	15%	9%	8%	21%	19%	28%	28%	22%	32%	36%	50%	32%
Improvise Accompaniments	11%	6%	8%	13%	19%	13%	24%	16%	50%	53%	59%	29%
Transpose Melodies	24%	16%	21%	32%	25%	50%	11%	6%	8%	34%	53%	21%
Transpose Accompaniments	10%	13%	8%	31%	19%	29%	21%	16%	42%	38%	53%	21%
Transpose Instruments	16%	6%	22%	26%	27%	22%	21%	15%	13%	37%	52%	43%
Open Scores	10%	13%	24%	38%	22%	20%	25%	28%	8%	28%	38%	48%
Sight-Reading Accomp.	21%	22%	20%	21%	22%	24%	15%	16%	20%	44%	41%	36%
Alto Clef	8%	13%	22%	29%	33%	17%	18%	20%	13%	45%	33%	48%
Playing by Ear	8%	10%	9%	26%	23%	26%	26%	23%	26%	41%	45%	39%
Playing Solos	41%	35%	38%	8%	19%	29%	5%	0%	0%	46%	45%	33%
Memorizing Solos	31%	29%	33%	18%	26%	25%	8%	3%	8%	44%	42%	33%
4-Part Chord Progressions	26%	6%	13%	26%	35%	30%	18%	19%	17%	29%	39%	39%
Modulations	16%	7%	8%	18%	23%	13%	29%	27%	17%	37%	43%	63%
Scales	51%	37%	42%	8%	27%	38%	15%	3%	0%	26%	33%	21%
Arrange Pieces	15%	13%	8%	28%	25%	29%	18%	3%	25%	38%	59%	38%
Compose Pieces	21%	6%	8%	13%	35%	17%	18%	13%	25%	49%	45%	50%
Accompany Solos	23%	23%	20%	28%	17%	32%	15%	13%	20%	35%	47%	28%
Accompany Groups	20%	13%	14%	23%	19%	23%	20%	13%	18%	38%	55%	45%

Note. N = 97, F (n = 39), P (n = 29), T (n = 26).

Most faculty members thought that their collegiate piano training adequately prepared them to play piano solos, memorize piano solos, play scales, and play four-part chord progressions, but that it was inadequate in developing their harmonizing melodies without symbols, playing pieces by ear, and devising modulation skills. Performers and teachers, in general, did not rate group piano or piano lessons as inadequate, rather, they selected not applicable, suggesting that they never learned the skills or learned them elsewhere. In their opinion, playing piano solos and scales were the only skills that were developed adequately by collegiate piano courses.

More teachers reported inadequate training on improvising and transposing accompaniments than did other participants, but very adequate training on reading melodies in alto and tenor clef than did other participants. Fewer performers reported inadequate training on arranging pieces than did other participants.

***14. Would you use any of the piano skills mentioned above if you were more proficient at the piano?***

Most participants reported that they would use the piano more often if they were more proficient (see Table 18). This trend was especially evident for teachers; 67% of teachers reported that they would use the piano more if they had more advanced skills.

Table 18: Proportion of Faculty, Performers, and Teachers Who Would Use the Piano More if They Were More Proficient

Response	Faculty (n = 43)	Performers (n = 38)	Teachers (n = 28)
Yes	57%	59%	67%
No	43%	41%	33%

Participants were encouraged to provide an example of a piano skill they would use more frequently if they were more proficient at the piano. Of the 51 participants who

provided an example, 24 would have liked to be more proficient accompanists. Other piano skills that participants mentioned were sight-reading, improvising with chords, transposing instruments, harmonizing melodies, playing piano solos, reading open scores, arranging pieces, playing by ear, and transposing accompaniments.

**15. How important to my job are functional piano skills?**

Participants reported whether piano skills were not important at all, not important, somewhat important, important, or of the utmost importance to their current music career. Most indicated that piano skills were important or of the utmost importance to their jobs (see Table 19). A smaller proportion of faculty members reported that piano skills were unimportant to their jobs than did the other professions. In fact, more faculty members reported piano skills as being of the utmost importance than did performers or teachers.

Table 19: Importance of Piano Skills to Faculty, Performers, and Teachers

Importance	Faculty ( <i>n</i> = 43)	Performers ( <i>n</i> = 38)	Teachers ( <i>n</i> = 28)
Not important at all	7%	16%	14%
Not important	14%	19%	14%
Somewhat important	14%	16%	21%
Important	30%	27%	29%
Utmost importance	35%	22%	21%

**16. How much instruction do you think undergraduate music students in your field should receive on the following functional piano skills?**

Participants reported whether undergraduate music students in their field should receive substantial, moderate, little, or no piano training on 12 selected piano skills (see Tables 20a and 20b). There were very few piano skills that participants thought should

receive no attention in college piano classes (i.e. memorize piano solos, play piano solos, and transpose accompaniments).

Most faculty members (55%), performers (47%), and teachers (44%) thought that undergraduates in their field should receive substantial training on sight-reading. Faculty members generally thought undergraduates should receive substantial training on accompanying, improvising accompaniments, harmonizing melodies without symbols, sight-reading open scores, sight-reading, playing scales, transposing melodies, and transposing accompaniments, but that undergraduates should not receive much instruction on playing and memorizing piano solos.

Performers thought undergraduates in their field should receive substantial training on playing chord progressions, harmonizing melodies with letter symbols, sight-reading, and playing scales. The majority of performers indicated that undergraduates in their field should receive a moderate amount of training on functional piano skills, such as accompanying soloists, accompanying groups, improvising melodies, improvising accompaniments, harmonizing melodies with roman numerals, letter symbols, and without symbols, sight-reading open scores, transposing melodies, and playing solos.

Table 20a: Participants' Proposed Piano Skill Training for Undergraduates

Skills	Substantial	Moderate	Little	None
Accompany Soloists	39%	33%	19%	9%
Accompany Groups	30%	32%	31%	7%
Chord Progressions	42%	42%	14%	1%
Improvise Melodies	23%	35%	38%	5%
Improvise Accompaniments	29%	33%	31%	7%
Harmonize Melodies with I, IV, V7	31%	44%	20%	5%
Harmonize Melodies with Amin, C7	35%	39%	21%	5%
Harmonize Melodies w/o Symbols	31%	37%	29%	4%
Sight-read Open Scores	32%	46%	18%	4%
Sight-read	50%	33%	14%	3%
Scales	39%	37%	20%	4%
Transpose Melodies	35%	43%	18%	4%
Transpose Accompaniments	27%	36%	31%	7%
Transpose Harmonizations	25%	39%	30%	6%
Play Solos	24%	28%	35%	13%
Memorize Solos	13%	20%	43%	23%

*Note.* N= 108



Table 20b: Faculty Members', Performers', and Teachers' Proposed Piano Skill Training for Undergraduates

Skills	Substantial			Moderate			Little			None		
	F	P	T	F	P	T	F	P	T	F	P	T
Accompany Soloists	40%	33%	44%	31%	39%	30%	21%	17%	19%	7%	11%	7%
Accompany Groups	33%	27%	30%	31%	32%	33%	31%	32%	30%	5%	8%	7%
Chord Progressions	40%	47%	38%	48%	42%	35%	12%	8%	27%	0%	3%	0%
Improvise Melodies	31%	20%	15%	24%	40%	44%	40%	37%	33%	5%	3%	7%
Improvise Accompaniments	37%	25%	22%	26%	39%	37%	35%	31%	26%	2%	6%	15%
Harmonize Melodies with I, IV, V7	36%	31%	22%	40%	46%	48%	17%	20%	26%	7%	3%	4%
Harmonize Melodies with Amin, C7	36%	36%	33%	40%	36%	41%	19%	22%	22%	5%	6%	4%
Harmonize Melodies w/o Symbols	40%	22%	27%	31%	39%	42%	26%	33%	27%	2%	6%	4%
Sight-read Open Scores	45%	26%	19%	40%	51%	48%	14%	20%	22%	0%	3%	11%
Sight-read	55%	47%	44%	33%	31%	37%	10%	19%	15%	2%	3%	4%
Scales	40%	46%	30%	31%	34%	48%	21%	20%	19%	7%	0%	4%
Transpose Melodies	45%	28%	27%	40%	44%	46%	12%	25%	19%	2%	3%	8%
Transpose Accompaniments	36%	26%	15%	36%	31%	41%	24%	37%	33%	5%	6%	11%
Transpose Harmonizations	32%	22%	19%	44%	33%	38%	22%	39%	31%	2%	6%	12%
Play Solos	29%	17%	28%	29%	36%	16%	36%	33%	36%	7%	14%	20%
Memorize Piano Solos	20%	8%	11%	15%	22%	26%	44%	47%	37%	22%	22%	26%

Note. N= 108, F (n = 43), P (n = 38), T (n = 28).

Most teachers thought that undergraduates in their field should receive substantial training on sight-reading and accompanying soloists and a moderate amount of training on accompanying groups, improvising melodies, harmonizing melodies with roman

numerals, letter symbols, and without symbols, sight-reading open scores, playing scales, and transposing melodies, accompaniments, and harmonizations. Like performers and faculty members, most teachers thought that undergraduates should not receive much training on playing and memorizing piano solos.

***17. When do you think piano study for music majors should take place and for how long should music majors study piano?***

To answer the first part of this question, participants reported whether undergraduates should study piano during the first two years, during the middle of their degree program, or closer to graduation. Overwhelmingly, participants from all groups thought piano study should take place during the first two years.

Table 21: Faculty Members', Performers', and Teachers' Proposed Placement of Undergraduate Piano Training

Placement	Faculty ( <i>n</i> = 43)	Performers ( <i>n</i> = 38)	Teachers ( <i>n</i> = 28)
First two years	78%	92%	65%
Middle two years	11%	5%	19%
Last two years	11%	3%	15%

For the second part of this question, participants reported the number of years they thought undergraduates should study the piano. Half of the faculty members thought undergraduates should study the piano for four years and most performers and teachers thought that undergraduates should study the piano for 1-3 years. Some participants also suggested that the amount of piano study required should depend on students' proficiency.

Table 22: Faculty Members', Performers', and Teachers' Proposed Length of Study for Undergraduate Piano Training

Years	Faculty ( <i>n</i> = 43)	Performers ( <i>n</i> = 38)	Teachers ( <i>n</i> = 28)
More than 4 years	9%	4%	0%
4 years	50%	11%	22%
Between 1-3 years	14%	68%	63%
None	0%	0%	4%
Depends on proficiency	27%	18%	11%

***18. Do you have any further comments about piano proficiency requirements?***

Many participants used this question as an opportunity to comment on what should be included in group piano class curricula or to describe their own piano skill development; others identified important piano skills or proposed ways to organize the undergraduate piano program (see Appendix D). Forty-nine percent of faculty members, 35% of performers, and 57% of teachers responded to this question. Two independent graduate students in music coded participants' responses to this question. The inter-judge reliability was .91. Of the 44 comments provided by the participants, 38% focused on changes to current group piano classes, 27% identified important piano skills, 22% referred to participants' piano training, and 13% were centered around other topics, such as questions about the survey.

***19. Is there anything else related to this questionnaire you would like to add?***

The last question of the survey provided participants with an opportunity to supply more general comments about piano requirements, their previous experiences, or comments about the questionnaire. Appendix E contains all of the participants' responses

to this question. Only 24 participants provided comments here; 23% of faculty members, 19% of performers, and 32% of teachers did so. Two independent graduate students in music coded participants' responses to this question. The inter-judge reliability was .89. Twenty-nine percent of these participants provided comments about the survey, 29% commented on their piano training, 25% suggested changes to current group piano classes, and 17% remarked about important functional piano skills.

### **CROSS TABULATIONS**

In addition to analyzing participants' responses to each of the questions of the survey, I cross-tabulated their responses to two related questions. This allowed me to explore possible relationships between participants' training and the frequency with which they use functional piano skills, how important piano skills are to their job, and their proposals for undergraduate piano training.

I conducted a series of cross tabulations between the importance of piano skills to participants' careers (question 15) and the frequency with which they use the 19 piano skills (question 13). I collapsed the responses to the question regarding the importance of functional piano skills to their career from five categories (not important at all, unimportant, somewhat important, important, and of the utmost importance) down to three (unimportant, somewhat important, and important) by combining the lowest two categories (not important at all and unimportant) and the top two categories (important and of the utmost importance). Generally, participants who thought piano skills were important to their job used them frequently (see Table 23). The same is true for participants who used piano skills occasionally; most participants who used piano skills occasionally reported that they were important to their jobs. The responses of participants who reported never using piano skills were more varied. For example, 33% of participants who reported never improvising accompaniments thought piano skills were

important to their jobs. The same was true for transposing melodies to concert pitch, reading alto and tenor clefs, playing and memorizing piano solos, devising modulations, composing, and accompanying ensembles; participants who used those skills frequently thought piano skills were important and those participants who never used those skills generally thought piano skills were not important to their jobs.

Table 23: Participants' Frequency of Use and Importance Rating of Selected Piano Skills

Piano Skill	Frequency	Importance		
		NI	SI	I
Harmonize Melodies with Letter Symbols	R ( <i>n</i> = 29)	7%	7%	86%
	O ( <i>n</i> = 37)	14%	16%	70%
	N ( <i>n</i> = 41)	54%	24%	22%
Harmonize Melodies without Symbols	R ( <i>n</i> = 23)	0%	9%	91%
	O ( <i>n</i> = 38)	16%	13%	71%
	N ( <i>n</i> = 46)	50%	24%	26%
Improvise Accompaniments	R ( <i>n</i> = 24)	8%	0%	92%
	O ( <i>n</i> = 33)	18%	18%	64%
	N ( <i>n</i> = 49)	43%	26%	31%
Transpose Melodies	R ( <i>n</i> = 35)	6%	20%	74%
	O ( <i>n</i> = 42)	21%	5%	74%
	N ( <i>n</i> = 29)	59%	31%	10%
Transpose Accompaniments	R ( <i>n</i> = 25)	4%	16%	80%
	O ( <i>n</i> = 36)	11%	14%	75%
	N ( <i>n</i> = 43)	53%	19%	28%

Table 23: *Continued.*

Transpose Instruments	R ( <i>n</i> = 18)	11%	11%	78%
	O ( <i>n</i> = 33)	9%	21%	70%
	N ( <i>n</i> = 56)	43%	16%	41%
Read Open Scores	R ( <i>n</i> = 28)	7%	11%	82%
	O ( <i>n</i> = 41)	20%	17%	63%
	N ( <i>n</i> = 38)	50%	21%	29%
Sight-Read Accompaniments	R ( <i>n</i> = 48)	8%	8%	83%
	O ( <i>n</i> = 28)	25%	32%	43%
	N ( <i>n</i> = 30)	57%	17%	26%
Read Alto Clef	R ( <i>n</i> = 19)	16%	5%	79%
	O ( <i>n</i> = 43)	16%	21%	63%
	N ( <i>n</i> = 44)	41%	18%	41%
Play By Ear	R ( <i>n</i> = 32)	13%	0%	87%
	O ( <i>n</i> = 34)	15%	21%	64%
	N ( <i>n</i> = 40)	48%	27%	25%
Play Piano Solos	R ( <i>n</i> = 19)	21%	5%	74%
	O ( <i>n</i> = 31)	7%	16%	77%
	N ( <i>n</i> = 56)	39%	21%	39%
Memorize Piano Solos	R ( <i>n</i> = 15)	13%	7%	80%
	O ( <i>n</i> = 26)	15%	15%	69%
	N ( <i>n</i> = 65)	34%	20%	46%
Play Chord Progressions	R ( <i>n</i> = 25)	4%	4%	92%
	O ( <i>n</i> = 29)	17%	24%	59%
	N ( <i>n</i> = 52)	42%	19%	39%

Table 23: *Continued.*

Devise Modulations	R ( <i>n</i> = 14)	7%	7%	86%
	O ( <i>n</i> = 33)	18%	15%	67%
	N ( <i>n</i> = 59)	36%	20%	44%
Play Scales	R ( <i>n</i> = 38)	16%	5%	79%
	O ( <i>n</i> = 37)	14%	22%	65%
	N ( <i>n</i> = 30)	57%	27%	17%
Arrange Pieces	R ( <i>n</i> = 19)	5%	5%	90%
	O ( <i>n</i> = 49)	20%	20%	60%
	N ( <i>n</i> = 36)	44%	20%	36%
Compose Pieces	R ( <i>n</i> = 11)	9%	0%	91%
	O ( <i>n</i> = 36)	19%	11%	90%
	N ( <i>n</i> = 59)	34%	24%	42%
Accompany Soloists	R ( <i>n</i> = 34)	12%	6%	82%
	O ( <i>n</i> = 33)	15%	24%	61%
	N ( <i>n</i> = 39)	49%	20%	31%
Accompany Ensembles	R ( <i>n</i> = 18)	6%	0%	94%
	O ( <i>n</i> = 25)	12%	16%	72%
	N ( <i>n</i> = 63)	38%	22%	40%

*Note.* NI = Not important, SI = Somewhat Important, I = Important, R = Regularly, O = Occasionally, and N = Never.

I performed the same analysis with each group of participants (faculty, performers, and teachers) separately to determine if this trend was consistent across professions. The majority of faculty members who thought piano skills were important to their career harmonized melodies with and without symbols, transposed melodies,

transposed accompaniments, read open scores, played songs by ear, and played scales regularly or occasionally (see Table 24). For those same skills, most faculty members who reported never using those skills reported that the ability to play the piano was not important to their job. Their responses to a few skills did not follow that trend, such as: transposing melodies to concert pitch, reading alto and tenor clef, playing piano solos, memorizing piano solos, devising modulations, arranging, composing, and accompanying ensembles; regardless of how frequently they used the skill, the majority of faculty members thought piano skills were important.

Performers' responses were similar to those of faculty members' (see Table 25). The majority of performers who thought piano skills were important regularly used most functional piano skills regularly or occasionally. For performers, playing piano solos was the only skill that varied from that trend; half of the performers who thought piano skills were not important regularly played piano solos.



Table 24: Faculty Members' Frequency of Use and Importance Rating of Selected Piano Skills

Piano Skill	Frequency	Importance		
		NI	SI	I
Harmonize Melodies with Letter Symbols	R ( <i>n</i> = 12)	0%	8%	92%
	O ( <i>n</i> = 18)	11%	11%	78%
	N ( <i>n</i> = 13)	54%	23%	23%
Harmonize Melodies without Symbols	R ( <i>n</i> = 11)	0%	9%	91%
	O ( <i>n</i> = 19)	11%	5%	84%
	N ( <i>n</i> = 13)	54%	31%	15%
Improvise Accompaniments	R ( <i>n</i> = 9)	0%	0%	100%
	O ( <i>n</i> = 15)	13%	13%	74%
	N ( <i>n</i> = 18)	39%	22%	39%
Transpose Melodies	R ( <i>n</i> = 16)	0%	19%	81%
	O ( <i>n</i> = 20)	20%	10%	70%
	N ( <i>n</i> = 7)	21%	14%	65%
Transpose Accompaniments	R ( <i>n</i> = 10)	0%	20%	80%
	O ( <i>n</i> = 21)	5%	14%	81%
	N ( <i>n</i> = 11)	64%	9%	27%
Transpose Instruments	R ( <i>n</i> = 8)	13%	25%	62%
	O ( <i>n</i> = 18)	11%	22%	67%
	N ( <i>n</i> = 17)	35%	0%	65%
Read Open Scores	R ( <i>n</i> = 11)	0%	9%	91%
	O ( <i>n</i> = 22)	14%	18%	68%

Table 24: *Continued*

	N ( <i>n</i> = 10)	60%	10%	30%
Sight-Read Accompaniments	R ( <i>n</i> = 24)	8%	8%	83%
	O ( <i>n</i> = 7)	29%	14%	57%
	N ( <i>n</i> = 12)	42%	25%	33%
Read Alto Clef	R ( <i>n</i> = 8)	0%	0%	100%
	O ( <i>n</i> = 17)	17%	12%	71%
	N ( <i>n</i> = 18)	33%	22%	44%
Play By Ear	R ( <i>n</i> = 20)	10%	0%	90%
	O ( <i>n</i> = 9)	11%	22%	67%
	N ( <i>n</i> = 14)	43%	29%	28%
Play Piano Solos	R ( <i>n</i> = 9)	22%	11%	67%
	O ( <i>n</i> = 14)	7%	14%	79%
	N ( <i>n</i> = 20)	30%	15%	55%
Memorize Piano Solos	R ( <i>n</i> = 8)	12%	13%	75%
	O ( <i>n</i> = 11)	9%	18%	73%
	N ( <i>n</i> = 24)	29%	13%	58%
Play Chord Progressions	R ( <i>n</i> = 16)	6%	6%	88%
	O ( <i>n</i> = 14)	14%	29%	57%
	N ( <i>n</i> = 13)	46%	8%	46%
Devise Modulations	R ( <i>n</i> = 7)	0%	14%	86%
	O ( <i>n</i> = 16)	19%	6%	75%
	N ( <i>n</i> = 20)	30%	20%	50%
Play Scales	R ( <i>n</i> = 17)	11%	12%	77%
	O ( <i>n</i> = 15)	7%	13%	80%

Table 24: *Continued.*

	N ( <i>n</i> = 10)	60%	20%	20%
Arrange Pieces	R ( <i>n</i> = 5)	0%	0%	100%
	O ( <i>n</i> = 24)	25%	21%	54%
	N ( <i>n</i> = 13)	23%	8%	69%
Compose Pieces	R ( <i>n</i> = 4)	0%	0%	100%
	O ( <i>n</i> = 15)	20%	13%	67%
	N ( <i>n</i> = 24)	25%	17%	58%
Accompany Soloists	R ( <i>n</i> = 16)	6%	6%	88%
	O ( <i>n</i> = 11)	18%	9%	73%
	N ( <i>n</i> = 16)	38%	25%	37%
Accompany Ensembles	R ( <i>n</i> = 7)	0%	0%	100%
	O ( <i>n</i> = 13)	0%	15%	85%
	N ( <i>n</i> = 23)	39%	17%	44%

*Note.* NI = Not important, SI = Somewhat Important, I = Important, R = Regularly, O = Occasionally, and N = Never.

Table 25: Performers' Frequency of Use and Importance Rating of Selected Piano Skills

Piano Skill	Frequency	Importance		
		NI	SI	I
Harmonize Melodies with Letter Symbols	R ( <i>n</i> = 12)	17%	8%	75%
	O ( <i>n</i> = 9)	22%	33%	44%
	N ( <i>n</i> = 15)	53%	13%	33%
Harmonize Melodies without Symbols	R ( <i>n</i> = 8)	0%	12%	88%
	O ( <i>n</i> = 11)	27%	27%	46%
	N ( <i>n</i> = 17)	53%	12%	35%
Improvise Accompaniments	R ( <i>n</i> = 9)	11%	0%	89%
	O ( <i>n</i> = 10)	30%	20%	50%
	N ( <i>n</i> = 17)	47%	24%	29%
Transpose Melodies	R ( <i>n</i> = 11)	9%	18%	73%
	O ( <i>n</i> = 11)	27%	0%	73%
	N ( <i>n</i> = 13)	54%	31%	15%
Transpose Accompaniments	R ( <i>n</i> = 12)	8%	17%	75%
	O ( <i>n</i> = 5)	40%	0%	60%
	N ( <i>n</i> = 18)	50%	17%	33%
Transpose Instruments	R ( <i>n</i> = 5)	0%	0%	100%
	O ( <i>n</i> = 10)	10%	30%	60%
	N ( <i>n</i> = 21)	52%	14%	33%
Read Open Scores	R ( <i>n</i> = 8)	0%	25%	75%
	O ( <i>n</i> = 15)	27%	20%	53%

Table 25: *Continued.*

	N ( $n = 13$ )	61%	8%	31%
Sight-Read Accompaniments	R ( $n = 15$ )	13%	7%	80%
	O ( $n = 10$ )	30%	40%	30%
	N ( $n = 10$ )	60%	10%	30%
Read Alto Clef	R ( $n = 6$ )	33%	0%	67%
	O ( $n = 43$ )	25%	31%	44%
	N ( $n = 13$ )	38%	8%	54%
Play By Ear	R ( $n = 6$ )	17%	0%	83%
	O ( $n = 16$ )	19%	19%	62%
	N ( $n = 13$ )	54%	23%	23%
Play Piano Solos	R ( $n = 4$ )	50%	0%	50%
	O ( $n = 12$ )	8%	25%	67%
	N ( $n = 19$ )	42%	16%	42%
Memorize Piano Solos	R ( $n = 3$ )	33%	0%	67%
	O ( $n = 7$ )	29%	14%	57%
	N ( $n = 25$ )	32%	20%	48%
Play Chord Progressions	R ( $n = 5$ )	0%	0%	100%
	O ( $n = 10$ )	30%	30%	40%
	N ( $n = 20$ )	40%	15%	45%
Devise Modulations	R ( $n = 5$ )	0%	0%	100%
	O ( $n = 12$ )	25%	25%	50%
	N ( $n = 18$ )	44%	17%	39%
Play Scales	R ( $n = 11$ )	27%	0%	73%
	O ( $n = 13$ )	15%	23%	62%

Table 25: *Continued.*

	N ( <i>n</i> = 11)	55%	27%	18%
Arrange Pieces	R ( <i>n</i> = 11)	9%	9%	82%
	O ( <i>n</i> = 12)	17%	25%	58%
	N ( <i>n</i> = 11)	64%	18%	18%
Compose Pieces	R ( <i>n</i> = 5)	0%	0%	100%
	O ( <i>n</i> = 14)	21%	14%	64%
	N ( <i>n</i> = 16)	50%	25%	25%
Accompany Soloists	R ( <i>n</i> = 11)	18%	0%	82%
	O ( <i>n</i> = 10)	20%	40%	40%
	N ( <i>n</i> = 14)	50%	14%	36%
Accompany Ensembles	R ( <i>n</i> = 6)	17%	0%	83%
	O ( <i>n</i> = 8)	25%	25%	50%
	N ( <i>n</i> = 21)	38%	19%	43%

*Note.* NI = Not important, SI = Somewhat Important, I = Important, R = Regularly, O = Occasionally, and N = Never.

Teachers' responses resembled those of both faculty members and performers; generally, if teachers rated piano skills as important to their career they also performed most piano skills regularly (see Table 26). There were, however, a few exceptions to this trend. The majority of teachers who thought piano skills were important never or only occasionally devised modulations. The same was true for composing; teachers who thought piano skills were important to their jobs composed new music occasionally or never.

Table 26: Teachers' Frequency of Use and Importance Rating of Selected Piano Skills

Piano Skill	Frequency	Importance		
		NI	SI	I
Harmonize Melodies with Letter Symbols	R ( <i>n</i> = 5)	0%	0%	100%
	O ( <i>n</i> = 10)	10%	10%	80%
	N ( <i>n</i> = 13)	54%	38%	8%
Harmonize Melodies without Symbols	R ( <i>n</i> = 4)	0%	0%	100%
	O ( <i>n</i> = 8)	12%	12%	76%
	N ( <i>n</i> = 16)	44%	31%	25%
Improvise Accompaniments	R ( <i>n</i> = 6)	17%	0%	83%
	O ( <i>n</i> = 8)	12%	25%	63%
	N ( <i>n</i> = 14)	42%	29%	29%
Transpose Melodies	R ( <i>n</i> = 8)	12%	25%	63%
	O ( <i>n</i> = 11)	18%	0%	82%
	N ( <i>n</i> = 9)	56%	44%	0%
Transpose Accompaniments	R ( <i>n</i> = 3)	0%	0%	100%
	O ( <i>n</i> = 10)	10%	20%	70%
	N ( <i>n</i> = 14)	50%	29%	21%
Transpose Instruments	R ( <i>n</i> = 5)	20%	0%	80%
	O ( <i>n</i> = 5)	0%	0%	100%
	N ( <i>n</i> = 18)	39%	33%	28%
Read Open Scores	R ( <i>n</i> = 9)	22%	0%	78%
	O ( <i>n</i> = 4)	25%	0%	75%
	N ( <i>n</i> = 15)	33%	40%	27%

Table 26: *Continued.*

Sight-Read Accompaniments	R ( $n = 9$ )	0%	11%	89%
	O ( $n = 11$ )	18%	36%	46%
	N ( $n = 8$ )	76%	12%	12%
Read Alto Clef	R ( $n = 5$ )	20%	20%	60%
	O ( $n = 10$ )	0%	20%	80%
	N ( $n = 13$ )	54%	23%	23%
Play By Ear	R ( $n = 6$ )	17%	0%	83%
	O ( $n = 9$ )	11%	22%	67%
	N ( $n = 13$ )	46%	31%	23%
Play Piano Solos	R ( $n = 6$ )	0%	0%	100%
	O ( $n = 5$ )	0%	0%	100%
	N ( $n = 17$ )	47%	35%	18%
Memorize Piano Solos	R ( $n = 4$ )	0%	0%	100%
	O ( $n = 8$ )	12%	12%	76%
	N ( $n = 16$ )	44%	31%	25%
Play Chord Progressions	R ( $n = 4$ )	0%	0%	100%
	O ( $n = 5$ )	0%	0%	100%
	N ( $n = 19$ )	42%	32%	26%
Devise Modulations	R ( $n = 2$ )	50%	0%	50%
	O ( $n = 5$ )	0%	20%	80%
	N ( $n = 21$ )	33%	24%	43%
Play Scales	R ( $n = 10$ )	10%	0%	90%
	O ( $n = 9$ )	22%	33%	45%
	N ( $n = 9$ )	56%	33%	11%



Table 26: *Continued.*

Arrange Pieces	R ( <i>n</i> = 3)	0%	0%	100%
	O ( <i>n</i> = 13)	15%	15%	70%
	N ( <i>n</i> = 12)	50%	33%	17%
Compose Pieces	R ( <i>n</i> = 2)	50%	0%	50%
	O ( <i>n</i> = 7)	14%	0%	86%
	N ( <i>n</i> = 19)	32%	32%	36%
Accompany Soloists	R ( <i>n</i> = 7)	14%	14%	71%
	O ( <i>n</i> = 12)	8%	25%	67%
	N ( <i>n</i> = 9)	67%	22%	11%
Accompany Ensembles	R ( <i>n</i> = 5)	0%	0%	100%
	O ( <i>n</i> = 4)	25%	0%	75%
	N ( <i>n</i> = 19)	36%	32%	32%

*Note.* NI = Not important, SI = Somewhat Important, I = Important, R = Regularly, O = Occasionally, and N = Never.

I cross-tabulated the frequency with which participants' used piano skills and their proposed piano training for undergraduates in their field (see Table 27). Like in the previous analyses, I collapsed participants' responses to the undergraduate training question from four choices (substantial, moderate, little, or none) to two categories (substantial/moderate or little/none).

As one might expect, the majority of participants who reported harmonizing melodies with letter symbols regularly thought undergraduates should receive training on harmonizing melodies with letter symbols. The same was true for harmonizing melodies without symbols, accompanying soloists, accompanying ensembles, transposing

accompaniments, and playing piano solos. Participants who used those skills regularly thought undergraduates in their field should receive training on those skills. Although many participants reported never using some skills they thought undergraduates should receive training on piano skills. For example, most of the participants who reported never harmonizing melodies with letter symbols thought undergraduates should receive substantial or moderate amounts of training on harmonizing melodies with letter symbols. The same was true for playing chord progressions, reading open scores, sight-reading accompaniments, playing scales, and transposing melodies; regardless of the frequency with which participants used those skills, they thought that undergraduates should receive training on them.

Table 27: Participants' Frequency of Use and Proposed Undergraduate Training on Selected Functional Piano Skills

Piano Skill	Frequency	More	Less
		Training	Training
Harmonize Melodies with Letter Symbols	R ( <i>n</i> = 29)	93%	7%
	O ( <i>n</i> = 35)	86%	14%
	N ( <i>n</i> = 40)	53%	47%
Harmonize Melodies without Symbols	R ( <i>n</i> = 23)	91%	9%
	O ( <i>n</i> = 37)	81%	19%
	N ( <i>n</i> = 43)	47%	53%
Improvise Accompaniments	R ( <i>n</i> = 23)	96%	4%
	O ( <i>n</i> = 32)	59%	41%
	N ( <i>n</i> = 47)	38%	62%
Play Chord Progressions	R ( <i>n</i> = 25)	92%	8%
	O ( <i>n</i> = 28)	93%	7%
	N ( <i>n</i> = 49)	78%	22%
Accompany Soloists	R ( <i>n</i> = 33)	94%	6%
	O ( <i>n</i> = 32)	88%	12%
	N ( <i>n</i> = 38)	42%	58%
Accompany Groups	R ( <i>n</i> = 18)	94%	6%
	O ( <i>n</i> = 24)	79%	21%
	N ( <i>n</i> = 61)	47%	53%
Read Open Scores	R ( <i>n</i> = 28)	75%	25%
	O ( <i>n</i> = 40)	93%	7%
	N ( <i>n</i> = 35)	66%	34%

Table 27: *Continued.*

Sight-Read Accompaniments	R ( <i>n</i> = 47)	94%	6%
	O ( <i>n</i> = 27)	74%	26%
	N ( <i>n</i> = 29)	76%	24%
Play Scales	R ( <i>n</i> = 36)	92%	8%
	O ( <i>n</i> = 37)	76%	24%
	N ( <i>n</i> = 28)	57%	43%
Transpose Melodies	R ( <i>n</i> = 35)	89%	11%
	O ( <i>n</i> = 42)	88%	12%
	N ( <i>n</i> = 27)	52%	48%
Transpose Accompaniments	R ( <i>n</i> = 25)	84%	16%
	O ( <i>n</i> = 36)	72%	28%
	N ( <i>n</i> = 39)	44%	56%
Play Piano Solos	R ( <i>n</i> = 17)	94%	6%
	O ( <i>n</i> = 31)	58%	42%
	N ( <i>n</i> = 53)	38%	62%
Memorize Piano Solos	R ( <i>n</i> = 14)	93%	7%
	O ( <i>n</i> = 26)	42%	58%
	N ( <i>n</i> = 62)	18%	82%

*Note.* T = Substantial or Moderate Training, NT = Little or No Training, R = Regularly, O = Occasionally, and N = Never.

I performed the same analysis for each group of participants separately (faculty members, performers, and teachers) (see Table 28). The results showed that most of the faculty members who used piano skills regularly thought undergraduates should receive

training on those skills. There were, however, some exceptions. Regardless of how frequently faculty members played chord progressions, read open scores, sight-read accompaniments, and transposed melodies they thought undergraduates should receive substantial training on those skills.

The same was true for performers and teachers. Generally, performers who reported using certain piano skills frequently thought undergraduates should receive training on those skills (see Table 29). However, like faculty members, there were some exceptions. Regardless of the frequency with which performers transposed melodies, played scales, sight-read accompaniments, read open scores, played chord progressions, and accompanied soloists, performers thought undergraduates should receive a substantial amount of training on those skills. For teachers, even if they did not frequently play chord progressions, harmonize melodies with letter symbols, harmonize melodies without symbols, read open scores, and sight-read, they thought undergraduates in their field should receive substantial training on them (see Table 30).

Table 28: Faculty Members' Frequency of Use and Proposed Undergraduate Training on Selected Functional Piano Skills

Piano Skill	Frequency	More	Less
		Training	Training
Harmonize Melodies with Letter Symbols	R ( <i>n</i> = 12)	83%	17%
	O ( <i>n</i> = 18)	89%	11%
	N ( <i>n</i> = 12)	50%	50%
Harmonize Melodies without Symbols	R ( <i>n</i> = 11)	91%	9%
	O ( <i>n</i> = 19)	74%	26%
	N ( <i>n</i> = 12)	50%	50%
Improvise Accompaniments	R ( <i>n</i> = 9)	100%	0%
	O ( <i>n</i> = 15)	67%	33%
	N ( <i>n</i> = 17)	35%	65%
Play Chord Progressions	R ( <i>n</i> = 16)	94%	6%
	O ( <i>n</i> = 14)	86%	14%
	N ( <i>n</i> = 12)	83%	17%
Accompany Soloists	R ( <i>n</i> = 16)	94%	6%
	O ( <i>n</i> = 11)	82%	18%
	N ( <i>n</i> = 15)	33%	67%
Accompany Groups	R ( <i>n</i> = 7)	86%	14%
	O ( <i>n</i> = 13)	85%	15%
	N ( <i>n</i> = 22)	45%	55%
Read Open Scores	R ( <i>n</i> = 11)	82%	18%
	O ( <i>n</i> = 22)	91%	9%
	N ( <i>n</i> = 9)	78%	22%

Table 28: *Continued.*

Sight-Read Accompaniments	R ( <i>n</i> = 24)	92%	8%
	O ( <i>n</i> = 7)	57%	43%
	N ( <i>n</i> = 11)	100%	0%
Play Scales	R ( <i>n</i> = 17)	88%	12%
	O ( <i>n</i> = 15)	73%	27%
	N ( <i>n</i> = 9)	33%	67%
Transpose Melodies	R ( <i>n</i> = 16)	94%	6%
	O ( <i>n</i> = 20)	85%	15%
	N ( <i>n</i> = 6)	67%	33%
Transpose Accompaniments	R ( <i>n</i> = 10)	90%	10%
	O ( <i>n</i> = 21)	76%	24%
	N ( <i>n</i> = 10)	50%	50%
Play Piano Solos	R ( <i>n</i> = 9)	100%	0%
	O ( <i>n</i> = 14)	50%	50%
	N ( <i>n</i> = 19)	42%	58%
Memorize Piano Solos	R ( <i>n</i> = 8)	100%	0%
	O ( <i>n</i> = 11)	27%	73%
	N ( <i>n</i> = 22)	14%	86%

*Note.* T = Substantial or Moderate Training, NT = Little or No Training, R = Regularly, O = Occasionally, and N = Never.

Table 29: Performers' Frequency of Use and Proposed Undergraduate Training on Selected Functional Piano Skills

Piano Skill	Frequency	More	Less
		Training	Training
Harmonize Melodies with Letter Symbols	R ( <i>n</i> = 12)	100%	0%
	O ( <i>n</i> = 8)	88%	12%
	N ( <i>n</i> = 15)	48%	52%
Harmonize Melodies without Symbols	R ( <i>n</i> = 8)	87%	13%
	O ( <i>n</i> = 11)	82%	18%
	N ( <i>n</i> = 16)	38%	62%
Improvise Accompaniments	R ( <i>n</i> = 9)	100%	0%
	O ( <i>n</i> = 15)	67%	33%
	N ( <i>n</i> = 17)	35%	65%
Play Chord Progressions	R ( <i>n</i> = 5)	100%	0%
	O ( <i>n</i> = 10)	100%	0%
	N ( <i>n</i> = 19)	84%	16%
Accompany Soloists	R ( <i>n</i> = 6)	100%	0%
	O ( <i>n</i> = 7)	71%	29%
	N ( <i>n</i> = 21)	48%	52%
Accompany Groups	R ( <i>n</i> = 10)	90%	10%
	O ( <i>n</i> = 10)	90%	10%
	N ( <i>n</i> = 14)	57%	43%
Read Open Scores	R ( <i>n</i> = 8)	75%	25%
	O ( <i>n</i> = 14)	100%	0%
	N ( <i>n</i> = 12)	58%	42%



Table 29: *Continued.*

Sight-Read Accompaniments	R ( <i>n</i> = 14)	93%	7%
	O ( <i>n</i> = 10)	90%	10%
	N ( <i>n</i> = 10)	50%	50%
Play Scales	R ( <i>n</i> = 9)	100%	0%
	O ( <i>n</i> = 13)	69%	31%
	N ( <i>n</i> = 11)	82%	18%
Transpose Melodies	R ( <i>n</i> = 11)	91%	9%
	O ( <i>n</i> = 11)	82%	18%
	N ( <i>n</i> = 13)	54%	46%
Transpose Accompaniments	R ( <i>n</i> = 12)	75%	25%
	O ( <i>n</i> = 5)	60%	40%
	N ( <i>n</i> = 17)	41%	59%
Play Piano Solos	R ( <i>n</i> = 3)	67%	33%
	O ( <i>n</i> = 12)	67%	33%
	N ( <i>n</i> = 19)	47%	53%
Memorize Piano Solos	R ( <i>n</i> = 2)	50%	50%
	O ( <i>n</i> = 7)	57%	43%
	N ( <i>n</i> = 25)	24%	76%

*Note.* T = Substantial or Moderate Training, NT = Little or No Training, R = Regularly, O = Occasionally, and N = Never.

Table 30: Teachers' Frequency of Use and Proposed Undergraduate Training on Selected Functional Piano Skills

Piano Skill	Frequency	More	Less
		Training	Training
Harmonize Melodies with Letter Symbols	R ( <i>n</i> = 5)	100%	0%
	O ( <i>n</i> = 9)	78%	22%
	N ( <i>n</i> = 13)	62%	38%
Harmonize Melodies without Symbols	R ( <i>n</i> = 4)	100%	0%
	O ( <i>n</i> = 7)	100%	0%
	N ( <i>n</i> = 15)	53%	47%
Improvise Accompaniments	R ( <i>n</i> = 6)	83%	17%
	O ( <i>n</i> = 7)	100%	0%
	N ( <i>n</i> = 14)	29%	71%
Play Chord Progressions	R ( <i>n</i> = 4)	75%	25%
	O ( <i>n</i> = 4)	100%	0%
	N ( <i>n</i> = 18)	67%	33%
Accompany Soloists	R ( <i>n</i> = 7)	100%	0%
	O ( <i>n</i> = 11)	91%	9%
	N ( <i>n</i> = 9)	33%	67%
Accompany Groups	R ( <i>n</i> = 5)	100%	0%
	O ( <i>n</i> = 4)	75%	25%
	N ( <i>n</i> = 18)	50%	50%
Read Open Scores	R ( <i>n</i> = 9)	67%	33%
	O ( <i>n</i> = 3)	75%	25%
	N ( <i>n</i> = 14)	64%	36%

Table 30: *Continued.*

Sight-Read Accompaniments	R ( <i>n</i> = 9)	100%	0%
	O ( <i>n</i> = 10)	70%	30%
	N ( <i>n</i> = 8)	75%	25%
Play Scales	R ( <i>n</i> = 10)	90%	10%
	O ( <i>n</i> = 9)	89%	11%
	N ( <i>n</i> = 8)	50%	50%
Transpose Melodies	R ( <i>n</i> = 8)	75%	25%
	O ( <i>n</i> = 11)	100%	0%
	N ( <i>n</i> = 8)	37%	63%
Transpose Accompaniments	R ( <i>n</i> = 3)	100%	0%
	O ( <i>n</i> = 10)	70%	30%
	N ( <i>n</i> = 12)	42%	58%
Play Piano Solos	R ( <i>n</i> = 5)	100%	0%
	O ( <i>n</i> = 5)	60%	40%
	N ( <i>n</i> = 15)	20%	80%
Memorize Piano Solos	R ( <i>n</i> = 4)	100%	0%
	O ( <i>n</i> = 8)	50%	50%
	N ( <i>n</i> = 15)	13%	87%

*Note.* T = Substantial or Moderate Training, NT = Little or No Training, R = Regularly, O = Occasionally, and N = Never.

### **SPEARMAN CORRELATIONS**

I performed a series of Spearman correlations between participants' piano training and (1) the frequency with which they used the 19 piano skills and (2) how adequately

they were trained in college piano classes. First, I will present the correlations between participants' precollege piano training and the frequency with which they use functional piano skills. Although I found that many correlations reached the significance level, none of them reflected a strong relationship between the factors I studied ( $r < 0.6$ ). In fact, most of the correlations I found in this study are considered low ( $r < .04$ ).

There were several significant correlations between the length of precollege individual piano training and the frequency with which they used the following skills: improvising accompaniments ( $r = -.292, p = .003$ ), transposing accompaniments ( $r = -.245, p = .01$ ), reading open scores ( $r = -.202, p = .04$ ), sight-reading accompaniments ( $r = -.498, p > .001$ ), playing piano solos ( $r = -.523, p > .001$ ), memorizing piano solos ( $r = -.446, p > .001$ ), playing four-part chord progressions ( $r = -.224, p = .02$ ), devising modulations ( $r = -.257, p = .009$ ), playing scales ( $r = -.362, p > .001$ ), accompanying soloists ( $r = -.446, p > .001$ ), and accompanying ensembles ( $r = -.420, p > .001$ ). The more years of piano lessons participants took before college the more frequently they used those piano skills.

I found a significant correlation between participants' precollege group piano training and the frequency with which they used one skill: memorizing piano solos ( $r = -.350, p = .03$ ). The more piano classes that participants took before entering college the more frequently they memorized piano solos in their current careers.

In addition to the correlations completed with precollege piano experiences and the frequency with which they used functional piano skills, I performed a series of Spearman correlations between the adequacy of their collegiate piano training and their precollege piano training. There were significant correlations between participants' precollege group piano classes and the adequacy of participants' training on transposing melodies ( $r = -.34, p = .03$ ), accompanying ensembles ( $r = -.397, p = .01$ ), and sight-

reading accompaniments ( $r = -.446, p = .005$ ). The more group piano classes that participants took before they entered college the more adequate they thought their collegiate piano training was on those skills. I also performed Spearman correlations between participants' precollege piano lesson experience and the adequacy of participants' training on 19 functional piano skills. The results revealed significant correlations between participants' precollege piano lesson experience and the adequacy of participants' college training for playing solos ( $r = -.28, p = .007$ ), memorizing piano solos ( $r = -.304, p = .003$ ), accompanying soloists ( $r = -.420, p > .001$ ), and accompanying ensembles ( $r = -.254, p = .01$ ); the longer participants took piano lessons before they entered college the more adequate they thought their collegiate piano training was on those skills.

I also conducted Spearman correlations between participants' collegiate training (both piano lessons and group piano classes) and the frequency with which they used 19 functional piano skills. I found significant correlations between the number of semesters of piano lessons and the frequency with which participants used the following piano skills: transposing accompaniments ( $r = -.28, p = .01$ ), open score reading ( $r = -.278, p = .009$ ), sight-reading accompaniments ( $r = -.463, p > .001$ ), playing piano solos ( $r = -.534, p > .001$ ), memorizing piano solos ( $r = -.391, p > .001$ ), playing chord progressions ( $r = -.353, p = .001$ ), playing scales ( $r = -.371, p > .001$ ), accompanying soloists ( $r = -.384, p > .001$ ), and accompanying ensembles ( $r = -.279, p = .009$ ). The participants who took more semesters of piano lessons during college used these skills more frequently than participants who took fewer semesters of piano lessons during college. I also found significant correlations between the number of semesters of group piano classes that participants took and the frequency with which they used the following piano skills: harmonizing melodies with letter symbols ( $r = .304, p = .02$ ), harmonizing melodies

without symbols ( $r = .318, p = .02$ ), improvising accompaniments ( $r = .33, p = .01$ ), sight-reading accompaniments ( $r = .296, p = .03$ ), devising modulations ( $r = .289, p = .03$ ), composing ( $r = .299, p = .02$ ), accompanying soloists ( $r = .326, p = .01$ ), and accompanying ensembles ( $r = .37, p = .005$ ). For all of those skills, the more semesters of group piano classes that participants had, the less frequently they used the skill.

I also conducted Spearman correlations between participants' collegiate piano training and the adequacy of their collegiate piano courses. There were no significant relationships between the adequacy of participants' training and the number of group piano classes they took. There were, however, significant correlations between participants' semesters of collegiate piano lessons and the adequacy of their training in sight-reading accompaniments ( $r = -.225, p = .05$ ), playing solos ( $r = -.491, p > .001$ ), memorizing piano solos ( $r = -.496, p > .001$ ), playing scales ( $r = -.292, p = .01$ ), accompanying soloists ( $r = -.386, p = .001$ ), and accompanying ensembles ( $r = -.376, p = .001$ ). The longer participants took piano lessons during college, the more adequate they thought their training was.

I completed a series of Spearman correlations between participants' piano training and their answer to "how important are piano skills to your job". The results showed a significant correlation between the importance of piano skills and participants precollege piano lessons ( $r = .384, p > .001$ ) and college piano lessons ( $r = .426, p > .001$ ). The more semesters of piano lessons that participants took during college, the more important they thought piano skills were to their career; however, the more semesters of group piano classes that participants took during college, the less important they thought piano was to their career ( $r = -.370, p = .004$ ).

In addition to the correlations I performed between participants' piano training and the importance of piano skills to their career, I completed a series of Spearman

correlations between their piano training and the piano skills to be included in the preparation of future musicians. There were two significant correlations between participants' precollege piano lessons and the skills they thought should be included in college piano classes. These two skills were accompanying soloists ( $r = -.264, p = .008$ ) and playing solos ( $r = -.226, p = .03$ ). The more piano lessons participants took before entering college, the more training they thought that undergraduates should receive on those two skills. Harmonizing melodies with letter symbols was the only skill that correlated with participants' precollege group piano training ( $r = .362, p = .02$ ); the more group piano classes participants took before they entered college, the less instruction they thought undergraduates should receive on harmonizing melodies with letter symbols. There were three significant correlations between the number of semesters of piano lessons during college and the skills participants thought should be developed in piano classes: sight-reading ( $r = -.282, p = .009$ ), playing piano solos ( $r = -.439, p > .001$ ), and memorizing piano solos ( $r = -.297, p = .006$ ). Participants who took more piano lessons during college thought those three skills should receive more emphasis in piano classes than participants with fewer years of precollege piano lessons. There were no significant relationships between the number of college group piano classes participants took and their proposed undergraduate piano training.

## V. Discussion

The purpose of this study was to gather information about professional musicians' development and use of functional piano skills in their careers. I asked faculty members, performers, and private music teachers from different regions and institutions in the country about their piano training, the frequency with which they used functional piano skills in their careers, the adequacy of their collegiate piano training, the importance of piano skills to their careers, and their suggestions for undergraduate music major piano training. This information may be valuable to group piano teachers as they are responsible for developing the piano skills that future musicians will use in their careers.

The results of this study showed that faculty members, performers and teachers generally performed similar musical activities, had comparable piano training, used similar piano skills, and agreed with each other about their suggestions for undergraduate piano training. There were, however, subtle differences among the three groups (faculty members, performers, and private music teachers) in the frequency with which they used functional piano skills.

For much of the analyses, I classified participants based on their indicated career (faculty members, professional performers, and private music teachers). Of most interest to me was how different professional musicians used piano skills in their job, as that would provide group piano teachers with information about the piano skills to be emphasized in their curricula. Generally, I found that more faculty members regularly used functional piano skills than did either performers or teachers. For example, more faculty members regularly harmonized melodies without symbols, transposed melodies, transposed accompaniments, sight-read accompaniments, played by ear, practiced solos, memorized solos, played four-part chord progressions, devised modulations, played



scales, and accompanied soloists than did either performers or teachers. One possible reason for faculty members' more regular piano use could be that they had more piano training than did other professional musicians. Faculty members took nearly twice as many years of piano lessons and group piano classes during college than did other participants.

There were three piano skills that all professional musicians used frequently (sight-reading accompaniments, playing scales, and transposing melodies); however faculty members also played by ear, played chord progressions, and accompanied soloists regularly. Performers regularly harmonized melodies with symbols, transposed accompaniments, and accompanied soloists and teachers read open scores and transposed accompaniments frequently. Although I did not ask participants to expound on how and when they used functional piano skills, sight-reading accompaniments, playing scales, harmonizing melodies with symbols and transposing melodies could easily be used by music theory instructors and church music directors or they could be used as teaching tools during private music lessons. For example, private music instructors may play a scale to warm-up their students or transpose a melody to concert pitch. They may harmonize a melody to modify a difficult accompaniment or sight-read an accompaniment to give their students an opportunity to hear what the piece will sound like.

Regardless of their career, most participants in this study reported never practicing and memorizing piano solos, composing, devising modulations, improvising accompaniments, accompanying groups, and transposing melodies to concert pitch. School music educators also reported rarely composing music or playing memorized piano solos (Buchanan, 1964; Christensen, 2000; Freeburne, 1952; Graff, 1985; McWhirter, 2006). A higher proportion of participants in this study reported never using

piano skills than did school music educators surveyed in previous studies (Christensen, 2000; Freeburne, 1952; March, 1988; McWhirter, 2006). In fact, more than 50% of participants in this study reported never practicing or memorizing solos, devising modulations, composing, and accompanying groups. School music educators use a wider variety of piano skills in their teaching than other professional musicians, so group piano teachers may consider shaping the group piano curriculum to reflect the differences among the various music professions. Tailoring group piano classes for each degree was first proposed in the 1960s, but this practice has not yet been implemented throughout the country (Rast, 1964; Skroch, 1991; Spicer, 1992). Some universities have begun providing specialized training for music educators; however these differentiated group piano programs are few (Spicer, 1992).

Tailoring group piano instruction to meet the needs of different degree programs has several advantages. First, it would provide university music students with an opportunity to focus on the piano skills that they will need in the future. Teachers could also provide their students with multiple opportunities to demonstrate the development of their piano skills in more realistic situations. For example, group piano teachers could assign students to lead a folk song in class, rehearse a choral piece from the piano, or accompany a classmate. These assignments might provide students with information about how these skills could be used and valued in their future careers. The primary disadvantage to specialized group piano instruction is that university music students may not know exactly how their career will develop at the start of their musical studies. They could major in performance during their undergraduate studies, but could earn a doctorate in music theory and ultimately teach music theory at a university. If the piano courses they take during their undergraduate piano program were designed for performers, then they may not have developed the piano skills they will need in their ultimate career.

There are a few skills, however, that were common among the different professions, such as sight-reading accompaniments, playing scales, and transposing melodies. Perhaps group piano programs could provide instruction to all music majors on those three skills and provide more specific instruction on the piano skills that music students in each degree program will need in their careers. For example, future faculty members could study playing by ear and playing chord progressions, whereas performers could practice harmonizing melodies with symbols and transposing accompaniments and private music teachers study open score reading and transposing accompaniments.

University music faculty, performers, and private music teachers reported that they had very similar piano training. The majority of participants in this study took piano lessons before they entered college and fulfilled a piano requirement during their undergraduate studies. During college, they took piano lessons for an average of two years or group piano classes for approximately one year. Although current group piano programs in the United States typically last between two and six semesters (Sonntag, 1980), 72% of the participants in the present study spent fewer semesters in group piano classes (Chin, 2002). Perhaps the reason why they took only a year of group piano courses may be related to the fact that many participants in this study took piano lessons in lieu of group classes.

Group piano classes are generally responsible for the teaching of functional piano skills whereas piano lessons are responsible for developing technique, playing scales, and learning piano repertoire. Rarely do students receive instruction on functional piano skills, such as harmonizing melodies, transposing accompaniments, or improvising during piano lessons (Walker, 2008). In other words, by taking piano lessons, university music students may not learn the functional piano skills they will need in the future. Many participants in this study did not receive adequate training on the piano skills they

use most frequently; perhaps because they learned functional piano skills on their own or in nonpiano classes.

Professional musicians in this study learned the majority of functional piano skills on their own or in other music classes such as music theory or music education methods courses. For example, most participants learned how to accompany, transpose accompaniments, improvise melodies, and harmonize melodies with letter symbols on their own, and learned how to harmonize melodies with roman numerals, play chord progressions, and transpose melodies in nonpiano classes, such as music theory or music education courses. Playing scales and piano technique were two skills that most participants learned in piano lessons. That no functional piano skills were clearly identified by the majority of participants as being developed in group piano classes is of great concern for group piano teachers. If professional musicians develop piano skills outside of group piano classes, then one must wonder how effective group classes are in training professional musicians to use the piano. I suggest that group piano curricula address those skills that professional musicians use in their careers. Group piano teachers may consider omitting assignments of doubtful relevance to nonpiano majors that are often included in group piano curricula such as memorizing piano literature, composing new pieces, or devising modulations. They could focus, instead, on sight-reading, transposing melodies, playing scales, harmonizing melodies with letter symbols, and reading open scores because these are the skills that professional musicians use most often. University music students may also benefit from having more than two semesters of piano class. This would allow teachers additional time to focus on those piano skills used by professional musicians, and provide students with more time to develop their piano skills to the level of proficiency needed for their intended career.

Although it would seem that requiring university music students to take more than two semesters of group piano classes would be another way to provide them with additional time to practice the skills that they will need in the future, the results of this study suggest otherwise. While many participants with two or fewer semesters of group piano classes identified skills such as harmonizing melodies, improvising accompaniments, sight-reading accompaniments, and accompanying soloists as being used frequently in their careers, those participants who took additional group piano classes reported using those skills less frequently. This suggests that it is not the amount of time spent in group piano classes that matters, but possibly the quality of instruction received on functional piano skills that determines the adequacy of students' training. It is important that the instruction that university music majors receive on functional piano skills focuses on developing the piano skills used by professional musicians. Although the participants in this study who took more semesters of group piano classes actually used functional piano skills less often, this does not negate the benefits of group piano instruction. It seems that the reason participants with fewer semesters of group piano courses might use those skills more frequently is due to the fact that they were already proficient at the piano when they entered college. The question becomes then, how can group piano classes better train those students with no prior piano training so that they become more comfortable using the piano in their careers?

There are two changes that can be made to group piano curricula. First, group piano classes could focus on the functional piano skills that professional musicians use most often, including omitting assignments such as memorizing and practicing piano solos, composing, and devising modulations. Second, group piano classes can be tailored to fit the needs of each degree program, which would provide students with opportunities to demonstrate their piano proficiency in more realistic situations, such as accompanying

a classmate or rehearsing an ensemble from the piano. These two changes to group piano classes could provide those individuals without any prior piano training with an opportunity to practice the piano skills they will need in the future.

If group piano classes are not training university music students to use the piano in their careers, then why should group piano classes be included in undergraduate music major programs? There are several reasons supporting the inclusion of group piano classes in undergraduate music major programs. First, students gain from “the stimulation and the unique opportunities for learning which a group offers” (Shockley, 1982, p. 104). As early as 1915, Cady began advocating for the uses of group piano classes because of the motivational benefits inherent in group activities (Richards, 1962). Fisher (2010) called group piano class a “social structure organized according to a common interest: the piano” (p. 9). In 1982, the International society of Music Educators thought:

Group instrumental teaching can provide a musical environment where good learning may take place beyond what is usually possible in individual instruction; further, a group can provide a social environment in which a student is supported and motivated, even challenged by peers. A group can provide a wider range of experience – discussion, critical listening, the study of historical contexts, structural analysis, and collective decision-making’ further, a group can be a performing medium for each member in it (as quoted in Fisher, 2010, p. 8).

In group piano classes, the discussions and collaborations that take place provide university music students with information and skills that they will use in the future (Fisher, 2010). This has not been studied empirically yet; future researchers could investigate the effect of discussions about how piano skills can be applied in the future on undergraduate music majors’ piano performances.

Second, “musical skills develop rapidly in a group, not only because of the longer lesson time, but also because it is usually more enjoyable and absorbing to sight read or improvise with others than alone” (Shockley, 1982, p. 104, 108). Countless researchers have championed the use of accompaniments during group piano instruction for

improving beat synchronization in university music students (Beeler, 1996; Coffman, 1980; Hanberry, 2004; Lowder, 1973b; Micheletti, 1981; Watkins, 1984; Watkins & Hughes, 1968; Whittaker, 1997). By playing with others, university music students learn how to continue playing regardless of any errors they commit. Continuing to play without stopping is a skill that school music educators, private music instructors, performers, and music faculty use. If they use the piano to direct an ensemble, accompany a student, or demonstrate for the class, they must all continue playing without stopping when errors occur.

Third – and I would argue that this is the most important benefit of group piano study – students who take group piano classes are provided with countless opportunities to practice performing in front of others. Fisher (2010) wrote, “Because performing regularly for peers in a nonthreatening environment is a normal procedure of group piano study, these students often experience less performance anxiety and demonstrate a greater sense of confidence and poise while playing in public” (p. 8). So, in addition to the training on functional piano skills that music majors receive in group piano classes, they also practice performing in public. In fact, several participants commented on how group piano classes provided them with the instruction on the “things that I learned in support of learning piano skills”, such as learning how to practice effectively or performing in front of others. One participant wrote, “Whereas I do not use all the skills I was taught, it is the culmination of all that I learned about piano that makes me better in the areas that I constantly use.”

Fisher (2010) described 20 benefits of group piano instruction:

1. Students learn from both their peers and their teacher.
2. Provides limitless performance opportunities.
3. Develops performance confidence and poise.
4. Exposes students to a wide variety of repertoire.

5. Encourages the development of critical listening skills as students listen to other students perform and then provide comments following the performance.
6. Challenges students to develop communication and social skills.
7. Aids in the development of leadership initiatives.
8. Fosters the development of problem-solving skills.
9. Encourages students to make transfers of concepts and principles.
10. Provides a dynamic and motivational learning environment.
11. Facilitates productive, positive competition.
12. Provides a prime environment in which to teach functional musicianship skills such as harmonization, transposition, sight-reading, improvisation, etc.
13. Provides a motivational environment in which creative games and exercises may be used to teach and drill concepts.
14. Has the potential to sustain student attention through captivating group activities, in turn permitting a longer lesson length.
15. Encourages the development of a strong rhythmic sense through group eurhythmic activities.
16. Provides a natural environment for the study and performance of piano ensembles (duets, trios, quartets, accompaniments).
17. Is a prime location in which to study technique.
18. Encourages the development of musical interpretation.
19. An efficient and effective means for the presentation of materials for the teacher.
20. Facilitates supervised practice opportunities (Fisher, 2010, p. 11).

I would argue that group piano classes are important and provide instruction on a valuable component of music majors' education; however the piano skills that are emphasized in group piano classes need to be those that are of the utmost importance to music majors' intended careers. Additionally, the exams that university music students take in those courses need to reflect the piano skills they will use in the future.

Like Skroch (1992), Graff (1985), Christensen (2000), and McWhirter (2006), I found that the majority of participants in this study took a piano proficiency exam during their undergraduate studies. Most university piano proficiency exams are designed to measure the acquisition of piano skills (Sonntag, 1980), however the skills students are tested on are not those used most frequently by professional musicians. Often the test consists of memorizing standard piano literature, such as Beethoven Sonatas and Bach Inventions (Sonntag, 1980; Spicer, 1992). Yet, the results of this study suggest that the



memorization of piano pieces is a skill rarely used by professional musicians. Therefore, requiring that university music students play memorized Sonatas and Inventions as a measurement of their level of piano proficiency is suspect, as it in no way demonstrates how they will use the piano in their intended career.

A few participants in this study were professional pianists and reported never taking a piano proficiency exam. Their piano requirement may have been waived due to their already proficient piano skills. In her study, Kim (1998) also found that many piano majors were exempt from group piano classes and proficiency requirements in their undergraduate studies. Additionally, the professional pianists in the current study reported using few functional piano skills and hardly any took a class requiring them to demonstrate the acquisition of functional piano skills. In fact, one participant wrote, “I think there should be a functional piano course for piano majors (and minors), to learn accompanying skills, harmonization skills and improvisation.” Another participant commented that because he took piano lessons during college, “I didn’t get much functional training and I REALLY wish I had.” Without receiving training on functional piano skills, piano majors may never develop the functional skills commonly included in group piano curricula, though rarely taught in piano lessons, such as harmonizing simple melodies, transposing accompaniments, or improvising over blues progressions (Walker, 2008). Piano majors might need those piano skills for a career they never anticipated having, such as teaching music theory at a local college or teaching private lessons at a local music school.

Most participants, regardless of their declared career, taught private lessons to precollege or college students; however, 17% of performers reported not teaching regularly. This was the only group of participants who did not teach as a regular component of their careers. All other participants reported teaching in some capacity.

Many participants wished they had received piano training that prepared them for their teaching responsibilities, and most of their comments included requests for additional training on playing or reducing piano accompaniments. One participant wrote, “Students need more practical skills; doing actual studio accompanying and playing scales for warm ups.” Another wrote, “Accompanying students in your private studio is very helpful to them and to you as a teacher!”

In fact, most university music students expect to teach privately at some point during their careers (Fredrickson, 2007a; Fredrickson, 2007b). Although most of the students in Fredrickson’s studies were performance majors, they understood that they would need to teach to supplement their income. Given that music students expected to teach individual lessons and the majority of participants in this study reported teaching private lessons, instructors may consider reviewing the piano class curricula to incorporate the piano skills commonly used in individual music instruction. Accompanying, sight-reading, and transposing are three piano skills commonly applied to the private music instruction setting. By emphasizing the skills that private music teachers frequently use, university music students may exit their piano instruction having practiced the skills they will use most frequently in the future.

Most participants said that they would use the piano more frequently in their careers if they were more proficient. More importantly, many of those participants indicated that they would have liked to have developed more proficiency in accompanying. Music educators have also reported that they desired more competent accompanying skills (Christensen, 2000; McWhirter, 2006). Clearly, professional musicians would like to be proficient accompanists, so group piano classes might consider providing additional training in that particular skill. Although I did not ask participants if they wanted to learn how to reduce a piano score to something manageable

to play, several participants in this study provided comments supporting this conjecture. One participant wrote, “I think more emphasis on how to improvise and how to problem-solve if a piano part is too difficult to play.” Reducing piano accompaniments is a useful skill especially if one does not have the technical facility to play a demanding accompaniment. Unfortunately, reducing difficult accompaniments is a skill rarely included in collegiate piano training.

Most participants in this study thought undergraduates should receive considerable training on playing chord progressions, reading open scores, sight-reading, playing scales, and transposing melodies. This was true regardless of the frequency with which the respondents used those skills. The agreement among participants regarding the piano skills that should be emphasized in the undergraduate curriculum is striking. Interestingly, the majority of participants learned those five skills in courses other than group piano classes, such as music theory, music education methods, or piano lessons. If most professional musicians think that undergraduate music majors should receive substantial training on playing chord progressions, reading open scores, sight-reading, playing scales, and transposing melodies, then why don't group piano classes devote the majority of their class time to the development of those five skills? There is no evidence to suggest that this is not a feasible option. Devoting time to these piano skills in group piano classes is not a novel idea. In 1988, March wrote “colleges should have curricula that stress functional piano skills, namely, sight-reading, playing chord progressions, accompanying, transposing, harmonizing, and improvising” (p. 119). In fact, researchers for the past 60 years have been proposing that group piano curricula be limited to the training of functional piano skills however, to date, there are still piano proficiency requirements that test undergraduates' ability to learn and memorize standard piano repertoire rather than the development of functional piano skills.

In this study, most participants thought that undergraduate music majors should study the piano for 1-3 years during the first two years of college. I would argue that if music majors only study the piano for two years during the beginning of their undergraduate program they may forget the piano skills they developed in their group piano classes by the time they graduate. In fact, some researchers have questioned whether group piano courses should take place during the first two years of college or later (Mauricio, 2009; McWhirter, 2006), given that for most music majors, a gap of nearly two years lapses between the fulfillment of undergraduate students' piano requirement and their graduation. As a result, many of the students let their piano skills atrophy to a point in which they are no longer able to pass the piano proficiency exam at the end of their degree (Hines, 1994; Mauricio, 2009). Some participants in the present study commented that due to the lapse of time between their piano proficiency requirement and the application of those skills in their careers, they had to re-learn previously developed skills. By requiring students to use their piano skills in many music classes throughout their studies, they may retain the level of piano proficiency they acquired in class piano. One participant suggested that other classes such as music education methods incorporate piano requirements so that music majors apply the newly learned skills throughout their degree. Including small piano assignments throughout the undergraduate degree program in all music courses might ensure that university music students maintain their playing abilities throughout their collegiate career. For example, choral music education methods courses could require that students warm-up the class using the piano or music performance majors could accompany one of their peers in a performance class for their applied lesson instructor. These simple assignments might be sufficient to maintain the level of proficiency acquired in group piano courses and may make the development of these skills more meaningful to students.

The time that elapsed between university music students' piano requirement and when they actually used the piano skills may be one explanation for participants' comments regarding the effectiveness of group piano classes. Some called piano classes a "hoop to jump through", whereas others commented on how many of the skills they were taught in their group piano classes had no relationship to the piano skills they use – or would like to use. In fact, one participant wrote:

The term "functional skills" is quite odd, since functional implies skills that are useful in one's experiences beyond graduation. Most of the skills that are typically termed functional have little function at all other than to torture students in piano classes.

Group piano teachers may consider adjusting group piano curricula to address the opinions of those individuals who call group piano classes a "waste of time". Most participants thought that piano skills were important to their career, yet they did not learn the piano skills they needed for their jobs in university piano classes. In other words, professional musicians clearly value the ability to play the piano, but group piano classes are not adequately preparing university music students to use the piano skills they will eventually need in their careers.

#### **LIMITATIONS OF THE STUDY AND RECOMMENDATIONS FOR FURTHER RESEARCH**

This study was conducted with a few universities, performing ensembles, and private music schools, so its conclusions must be taken cautiously. It is possible that the faculty members, performers, and music teachers participating in this study are not representative of the total population of professional musicians. The respondents in this study may have had strong opinions, either for or against, the use of functional piano skills in their jobs. In other words, perhaps those musicians who responded to the survey may have done so because they thought piano was of the utmost importance to their career or because they had low opinions of group piano instruction and wanted an

opportunity to voice their concerns. Perhaps another study that yields a higher response rate could allow the researcher to make more powerful generalizations about the use of piano skills by professional musicians.

Because of the poor response rate to the survey, I chose to classify participants into three categories (faculty members, performers, and private music instructors). If the study is replicated with more respondents, then researchers could experiment with classifying participants in other ways. For example, the participants in this study were categorized into three categories: faculty members, performers, and teachers; however, if more participants responded to the survey from each category, I could have included seven categories (i.e. faculty members only, performers only, teachers only, faculty members and performers, teachers and performers, faculty members and teachers, and those who engaged in all three activities). By dividing participants into those seven categories, I would have been able to determine how each type of musician uses the piano.

Also, due to the low response rate, I was unable to perform certain statistical tests. The descriptive information I gathered is valuable as it showcases the proportion of individuals who used piano skills in their careers; however statistical analyses to determine the significance of the differences I found among the three groups are desirable as they may identify critical trends in participants' beliefs..

In addition to replicating the current study using subjects from different locations, I suggest that future researchers explore the effect of changes made to the current group piano curriculum. I propose that researchers study specifically how selected changes to the curriculum affect undergraduate music majors' attitudes and preparation to use the piano skills identified as important by professional musicians. A study that compares the preparation of students whose piano assignments occur only in group piano classes to

students who are required to demonstrate piano skills in other music courses might provide evidence supporting the integration of piano assignments throughout the undergraduate music major program. This study could lead to better prepared music majors and, in turn, professional musicians who are effectively trained to use the piano in their careers.

## **CONCLUSIONS AND IMPLICATIONS**

The most salient findings of the present study are:

1. In general, faculty members, performers, and private music teachers used similar piano skills; however the piano skills they used differed from those used by school music teachers (Christensen, 2000; March, 1988; McWhirter, 2006). Most participants in this study, regardless of their career, reported sight-reading accompaniments, playing scales, and transposing melodies. In addition to those three skills, faculty members also accompanied soloists, played by ear, and played chord progressions, whereas performers harmonized melodies with symbols, transposed accompaniments, and accompanied soloists. Private music teachers regularly read open scores and transposed accompaniments, but school music teachers typically accompanied, read scores, sight-read, improvised, and harmonized melodies with and without symbols regularly (Christensen, 2000; March, 1988; McWhirter, 2006).
2. Most participants, regardless of their career, thought the ability to use functional piano skills was important to their career and would have used the piano more frequently if they were more proficient at the piano.
3. The majority of participants learned their functional piano skills on their own or in nonpiano music classes. Group piano classes were not clearly defined by most participants as the venue in which they learned any functional piano skills.

4. The majority of participants thought undergraduate music majors should receive 1-3 years of piano training, and that training should occur during the first two years of the degree program.
5. Regardless of the frequency with which participants used functional piano skills, they thought undergraduates should receive moderate or substantial training on sight-reading, playing chord progressions, playing scales, reading open scores, harmonizing melodies with letter symbols, and transposing melodies.
6. In general, if participants thought the piano was important to their career, they reported using piano skills regularly or occasionally.
7. The more years of piano lessons that participants took before entering college, the more frequently they improvised accompaniments, transposed accompaniments, read open scores, sight-read accompaniments, played piano solos, memorized piano solos, played four-part chord progressions, devised modulations, played scales, accompanied soloists, and accompanied ensembles.
8. The more semesters of piano lessons participants had during college, the more frequently they transposed accompaniments, read open scores, sight-read accompaniments, played piano solos, memorized piano solos, played chord progressions, played scales, accompanied soloists, and accompanied ensembles.
9. The more semesters of group piano classes that participants took during college the less frequently they harmonized melodies with letter symbols, harmonized without symbols, improvised accompaniments, sight-read accompaniments, devised modulations, composed, accompanied soloists, and accompanied ensembles.



I suggest that creating a group piano curriculum that effectively develops functional piano skills becomes a priority for group piano teachers and researchers working on the preparation of professional musicians. Group piano teachers' attention should continue to be concentrated on developing functional piano skills, such as sight-reading, playing chord progressions, playing scales, reading open scores, transposing melodies, and harmonizing melodies with letter symbols, as these are the piano skills that professional musicians value and use most.

Music faculty members, performing musicians, private music teachers, and public school music educators use different piano skills with varying degrees of regularity. Most school music teachers use the piano daily (McWhirter, 2006), whereas other professional musicians report using functional skills occasionally or regularly. Current group piano practices do not provide adequate training on the functional piano skills that are needed for many professional musicians. Tsai said "A diligent instructor is someone who is tireless in adjusting the curriculum" (Tsai, 2007, p. 44). I would argue that group piano curriculum should continue to be adjusted so that the needs of all of the music majors and future musicians are effectively met.

## Appendix A

### 1. Informed Consent

Dear Colleague:

You are invited to participate in a survey, entitled "The Use of Functional Piano Skills." The study is conducted by Margaret M. Young, doctoral candidate in Music and Human Learning at Butler School of Music of The University of Texas at Austin.

The purpose of this study is to examine which functional piano skills professional musicians consider to be of greatest value to their careers. Your participation in the survey will contribute to the development of appropriate group piano curricula at the college level. It will take you approximately 10 minutes to complete the survey.

Risks to participants are considered minimal. There will be no costs for participating, nor will you benefit from participating. Identification numbers associated with email addresses will be kept during the data collection phase for tracking purposes only. The investigator will be the only person with access to the data during data collection. Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from the study at any time without penalty.

If you have any questions please call Margaret Young at (608)852-5162 or send an email to [mmyoung@mail.utexas.edu](mailto:mmyoung@mail.utexas.edu) or you may call Dr. Eugenia Costa-Giomi at (512)232-2066.

To complete the survey, please respond to the informed consent question:

This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board. If you have questions about your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish – the Institutional Review Board by phone at (512) 471-8871 or email at [orsc@uts.cc.utexas.edu](mailto:orsc@uts.cc.utexas.edu).

If you would like to provide any additional information related to this topic, feel free to contact me.

Thank you for your consideration.

**1. You are making a decision to participate in this study. Your answer below indicates that you have read the information provided above and have decided to participate in this study. If you later decide that you wish to withdraw from participating in this study, simply leave this site. You may discontinue your participation at any time.**

- Yes, I agree to participate in this study.
- No, I do not agree to participate in this study.

## 2. Demographic Information

1. Are you male or female?

Male

Female

2. What is your highest completed level of education?

3. In what areas have you completed degrees?

4. Please describe your current involvement in the music profession.

5. How many years have you been at your current position?

6. In which of the following music activities do you engage regularly? (Check all that apply)

Teach private lessons to precollege students

Teach private lessons to college students

Teach group classes to precollege students

Teach group classes to college students

Perform as a soloist

Perform in an ensemble

Other (please specify)

**7. If you teach music regularly, please indicate your primary teaching area. If you do not teach music, please select Not Applicable. (Check all that apply)**

- Not Applicable
- Music History/Ethnomusicology
- Individual Music Instruction
- Music Appreciation
- Conducting
- Music Theory/Aural Skills
- Composition
- Group Piano
- Other (please specify)

\_\_\_\_\_

### 3. Piano Training

1. Were you required to pass a piano proficiency exam?

- Yes  
 No  
 Unsure

2. When were you required to fulfill a piano requirement? (Check all that apply)

- Bachelors  
 Masters  
 Artist Diploma/Performance Certificate  
 Doctorate  
 Not Required

3. What type of piano training did you receive before you entered college?

Years:

Private Lessons

Group Classes

4. What piano training did you receive during college?

Semesters

Private Piano  
Lessons

Group Piano  
Classes

If you tested out of piano requirement, enter N/A.

**5. Where did you learn the following piano skills? (Check all that apply)**

	Piano Lessons	Group Piano Classes	Other Classes	Never Taught Skill
Sight-Reading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Open Score Reading	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Accompanying	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transposing Melodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Transposing Accompaniments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improvising Melodies	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Improvising Chords with Symbols	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Harmonizing Melodies using I, IV, V7	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Harmonizing Melodies using G, C7, Fm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Chord Progressions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Scales	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Technique	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

(please specify)

#### 4. Current Use of Piano Skills

1. For each of the items below, please indicate how frequently you currently use these functional piano skills. Please choose from the options of regularly, occasionally, or never. In addition, please indicate your college group piano classes or piano lessons preparation in these functional skills as very adequate, somewhat adequate, or inadequate. If you learned that skill in the piano lessons you took prior to college, developed the skill in classes other than college piano lessons or group piano classes, or developed the skill after college please select N/A.

	Frequency	Adequacy of College Preparation
Harmonize melodies using designated chord symbols such as C7, Amin, Fmaj	<input type="text"/>	<input type="text"/>
Harmonize melodies at sight without aid of symbols	<input type="text"/>	<input type="text"/>
Improvise accompaniments	<input type="text"/>	<input type="text"/>
Transpose simple melodies	<input type="text"/>	<input type="text"/>
Transpose simple accompaniments	<input type="text"/>	<input type="text"/>
Transpose instrumental parts to concert pitch on the piano	<input type="text"/>	<input type="text"/>
Sight-read instrumental or vocal open scores	<input type="text"/>	<input type="text"/>
Sight-read accompaniments	<input type="text"/>	<input type="text"/>
Sight-read alto or tenor clef parts	<input type="text"/>	<input type="text"/>
Play familiar songs by ear using simple chords and accompaniments	<input type="text"/>	<input type="text"/>
Play rehearsed piano solos	<input type="text"/>	<input type="text"/>
Play memorized piano solos	<input type="text"/>	<input type="text"/>

Play chord progressions with four-part voicing	<input type="text"/>	<input type="text"/>
Devise modulations	<input type="text"/>	<input type="text"/>
Play scales and arpeggios	<input type="text"/>	<input type="text"/>
Arrange an existing vocal or instrumental piece	<input type="text"/>	<input type="text"/>
Compose a new vocal or instrumental piece	<input type="text"/>	<input type="text"/>
Accompany a soloist	<input type="text"/>	<input type="text"/>
Accompany an ensemble	<input type="text"/>	<input type="text"/>
Other	<input type="text"/>	<input type="text"/>
(please specify)	<input type="text"/>	
<p><b>2. Would you use any of the piano skills mentioned above if you were more proficient at the piano?</b></p> <p><input type="radio"/> Yes</p> <p><input type="radio"/> No</p> <p>For example:</p> <input type="text"/>		
<p><b>3. How important to my job are functional piano skills, one being not important at all and five being of the utmost importance?</b></p> <p><input type="radio"/> 1 Not important at all</p> <p><input type="radio"/> 2 Not important</p> <p><input type="radio"/> 3 Somewhat important</p> <p><input type="radio"/> 4 Important</p> <p><input type="radio"/> 5 Utmost importance</p>		



## 5.

1. How much instruction do you think undergraduate music students in your field should receive on the following functional piano skills? Please select the appropriate box of substantial, moderate, little instruction, or none.

	Substantial	Moderate	Little	None
Accompanying Soloists	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accompanying Groups	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playing Chord Progressions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improvising Melodies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Improvising Accompaniments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonizing Melodies with Roman Numerals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonizing Melodies with Letter Symbols	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Harmonizing Melodies without Symbols	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sight-Reading Open Scores	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sight-Reading Melodies and Harmonizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playing Scales and Arpeggios	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transposing Melodies	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transposing Accompaniments	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Transposing Harmonizations	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Playing Piano Solos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Memorizing Piano Solos	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**2. When do you think piano study for music majors should take place and for how long should music majors study the piano?**

- Within the first two years
- In the middle of the undergraduate degree program
- Closer to Graduation

For how long?

**3. Do you have any further comments about the piano proficiency requirements?**

**4. Is there anything else related to this questionnaire you would like to add?**

## Appendix B

IRB EXEMPT DETERMINATION DATE: 04/05/2010 IRB PROTOCOL #: 2010-03-0042 EXEMPT DETERMINATION EXPIRES ON: 04/04/2013

Dear Colleague:

You are invited to participate in a survey, entitled “The Use of Functional Piano Skills.” The study is conducted by Margaret M. Young, doctoral candidate in Music and Human Learning at Butler School of Music of the University of Texas at Austin.

The purpose of this study is to examine which functional piano skills professional musicians consider to be of greatest value to their careers. Your participation in the survey will contribute to the development of appropriate group piano curricula at the college level. It will take approximately 15 minutes to complete the survey. Please complete the survey by **April 23, 2010**.

Risks to participants are considered minimal. There will be no costs for participating, nor will you benefit from participating. Identification numbers associated with email addresses will be kept during the data collection phase for tracking purposes only. The investigator will be the only person with access to the data during data collection. This information will be stripped from the final dataset. Your participation in this survey is voluntary. You may decline to answer any question and you have the right to withdraw from the study at any time without penalty.

If you have any questions or would like to update your email address, please call Margaret Young at (608)852-5162, send an email to [mmyoung@mail.utexas.edu](mailto:mmyoung@mail.utexas.edu), or contact Dr. Eugenia Costa-Giomi at (512) 232-2066. You may also request a hard copy of the survey from the contact information below.

To complete the survey, click on this link: <https://www.surveymonkey.com/s/pianoskills>  
The password for the survey is: piano\_skills

If you do not want to receive any more reminders, you may email me at [mmyoung@mail.utexas.edu](mailto:mmyoung@mail.utexas.edu)

This study has been reviewed and approved by The University of Texas at Austin Institutional Review Board. If you have questions about your rights as a study participant, or are dissatisfied at any time with any aspect of this study, you may contact – anonymously, if you wish – the Institutional Review Board by phone at (512) 471-8871 or email at [orsc@uts.cc.utexas.edu](mailto:orsc@uts.cc.utexas.edu).

If you would like to provide any additional information related to this topic, feel free to contact me.

Thank you for your consideration.

Margaret M. (Sather) Young  
Doctoral Candidate  
University of Texas at Austin  
(608)852-5162  
[mmyoung@mail.utexas.edu](mailto:mmyoung@mail.utexas.edu)

## Appendix C

Dear Colleague:

A few weeks ago, you were asked to respond to a survey concerning functional piano skills. If you have not yet had an opportunity to respond to the survey, please take the time to do so now. Your response is significant to the study, particularly since your institution is the only institution in that state selected to participate in this study.

If possible, please respond to the survey by April 23, 2010. You may participate by going online to <http://surveymonkey.com/s/pianoskills>. The password is: piano\_skills

You may also contact me for a paper copy to be mailed if you prefer.

Thank you again for your willingness to participate. Please feel free to contact me if you have any questions or concerns.

Sincerely,

Margaret (Meggie) Young  
Doctoral Candidate  
Music and Human Learning  
University of Texas at Austin  
[mmyoung@mail.utexas.edu](mailto:mmyoung@mail.utexas.edu)  
(608)852-5162

## Appendix D

1. Proficiency should be required for acceptance to program.
2. The current model of undergraduate piano seems ineffective - that was my experience, and is the experience of most undergraduates with whom I speak.
3. They must know the circle of 5th and be able to play at least one octave scale, arpeggio, and primary chords with inversions in all the keys. Minor scale should be studied in three forms: natural, harmonic, and melodic.
4. Teach students to demonstrate rhythmic accompaniments. Read chord symbols.
5. I found my piano proficiency process to be very difficult, and I rarely need the skills now, but I feel I am a much better musician for the things that I learned in support of learning piano skills.
6. The term functional skills is quite odd, since functional implies skills that are useful in one's experiences beyond graduation. Most of the skills that are typically termed functional have little function at all other than to torture students in piano classes.
7. I think the key is creating a curriculum where students understand the value of what is taught in their everyday lives instead of relying on books that seem elementary. Make students lead one class per semester for a grade. If proficiency is about teaching then grade the teaching as well as the proficiency.
8. Sight-reading is the most valuable skill, in my opinion.
9. It isn't time spent that matters. It is the application of skills in a musical context that is important.
10. More is better. Nobody in the field would ever say that they wish they were less proficient in piano.

11. My answer to item 2 above is assuming that this study would last until the semester prior to student teaching.
12. Like most undergraduate students, I prepared for the piano proficiency but let my skills atrophy immediately afterward. Until piano skills are integrated into most other courses in the curriculum, they will be viewed as a requirement to pass and forget, not a career skill.
13. Everyone (and especially one-line instrumentalists) should develop considerable piano skills!
14. Teaching the most basic skills (scales, simple chord progressions, simple improvised melodies and harmonizations) in parallel with the basic theory curriculum would reinforce/support development of theory/aural skills proficiency tremendously. This was not the case at my undergrad institution, but was at my PhD institution. These skills strike me as being far more useful to music majors than just memorization/performance of short pieces (my undergrad piano proficiency experience).
15. How about one year piano and one year VOCAL proficiency - this teaches more about musicianship than just technical proficiency. Better yet, ADD the vocal proficiency to the piano proficiency - perfect complement.
16. Piano proficiency should be tailored to the student's goals and major.
17. Improvise, play "by ear," accompany with letter symbols, play simple melodies from notation, relate directly to skills needed in classroom rehearsing choral, instrumental should be more important than they usually are.
18. I wish I played better for real and substantive accompanying

19. Effective piano skills should be the primary course requirement for all music majors.  
Planning ahead, a strong background during the high school years should be encouraged.
20. It seemed like a hoop to jump through rather than training for what a performing musician/teacher would need.
21. I believe that keyboard harmony should be stressed much more in theory class.  
Ideally, young students should learn it along with starting and continuing their instrumental studies; starting in college is really too late.
22. I studied piano in grade school before learning horn. This is when it should happen, so that the student knows basic harmony and rhythm and can read several clefs before starting other instruments.
23. Learning piano skills early in the course of study would allow students more time to incorporate their skills into their practice. It would allow students to recognize what skills are relevant to their field and what additional skills would be beneficial. In my field, being able to play chord symbols and improvising on them is a great skill to learn. It would be wise for a worship leader to become proficient in this skill.
24. Reading lead sheets and maintaining accompaniment patterns / melody lines with transposing
25. Whereas I do not use all the skills I was taught, it is the culmination of all that I learned about piano that makes me better in the areas that I constantly use.
26. It should be integral to studies.
27. I think piano proficiency should be used to enhance the teaching of theory, to make students better musicians and give them skills that are applicable to their careers. I am an accomplished pianist, although I am a professor of another instrument. I

- don't think that many of the things that are required at UT in the piano proficiency classes are applicable to my current job or experience and is a waste of time for the students.
28. Can't have enough of it.
  29. Emphasis on practical skills in vernacular, such as reading jazz/pop chord symbols. Creating viable accompaniments to familiar material --- pop songs, TV themes, etc. would be valuable for students in my field.
  30. It really doesn't apply to my instrument since a harpist will go to the harp to do these activities (and be able to do them!)
  31. Every instrumentalist should understand and be able to play basic scales, melodies and harmonies on the piano. It makes music theory real instead of theoretical, especially since most instruments and singers are capable of playing/singing only one note at a time.
  32. I think more emphasis on how to improvise and how to problem-solve if a piano part is too difficult to play. I think it would be good to combine piano classes with music theory, so that students can use their knowledge of chords to create accompaniments for themselves.
  33. I feel that piano proficiency requirements should help prepare you for the real world of music teaching. My piano group classes did not do that, and many of my piano skills I learned on my own. Since the piano requirements were in the first two years of teaching, I feel like I lost a lot of the knowledge between taking the class and student teaching because I wasn't using the skills in between.
  34. Since my piano training in college was in private lessons as a minor to my composition major, I didn't get much functional training and I REALLY wish I had.



35. Make the benefits clear to the students.
36. I think that piano proficiency is most important for music education majors - mainly because in that field you are more likely going to use those skills. But still it's important for performance majors mainly for understanding and integrating theory and aural skills with an instrument.
37. Too much is currently expected of instrumentalists (non-piano).
38. They wasted a substantial amount of time that I should have been practicing my primary instrument. I use no piano whatsoever. The requirements were WAY too much, especially considering I don't even use it.
39. More singers in particular should have a high degree of proficiency prior to graduation. These are survival skills in the musical world.
40. I think piano proficiency is a poor use of most music students' time. Composers and Ear Training students are better served by using ear training programs or developing the computer skills necessary to compose in the modern world. It should be a requirement for Piano Majors only.
41. Make them practical---real life pieces.
42. My piano skills have been vital in my abilities as a voice teacher, and as a musician in general.
43. At many colleges, piano proficiency for non-piano majors is a joke. Among professionals who are non-pianists, almost to a person they wish they had more piano training in college.
44. The most important skills are ones that should work together with the primary instrument - practice habits! How to get the most out of 10 minutes a day. Prioritizing among details: technique, ear training, training the left hand to move

for functional bass + chords, fingering choices (so you know you're practicing it the way an educated pianist would). Not how to practice for a test.

## Appendix E

1. The previous section that asks what skills one uses and where they were learned is confusing. There were some skills that I use a great deal and that I learned quite well. They were included in my piano class instruction, but I developed the skills to a level of proficiency (really learned them) in classes other than of piano and in my own practice (apart from class assignments). Thus, the choice of either citing a level of preparation in class piano or N/A doesn't adequately capture my experience.
2. My education is from Europe and thus differs significantly from other response (I think).
3. Group piano is often taught as if students cannot hear harmonies Even when students can find the correct chords; they play them all in the left hand in clumps. Nothing about this is musical.
4. Will participants be given the opportunity to know the results of your survey?
5. I learned most of the functional piano I needed to teach theory and aural skills on the job, first as a graduate assistant and later as a faculty member. I couldn't have done that if I hadn't already had moderate skill in piano playing. So, although my piano lessons did not teach me the skills I ultimately needed professionally, they gave me enough facility with the piano that I could teach myself the professional skills I needed. So that begs the question: Which is more important, general facility or specific skills? For me the answer was the former. I did not know as an undergrad what music specialty I would end up in.
6. Other chordal instruments such as the GUITAR or HARP should be allowed as a substitute instrument for the piano. Very similar skill sets involved.

7. Playing and memorizing piano solos is a bit misleading for the field of music theory.  
It's important to be able to play and recall passages from memory, but it's not really necessary to play entire pieces.
8. Students need more practical skills doing actual studio accompanying and playing scales for warm ups.
9. Piano skills are very important for the success of all music majors!!!
10. Your questionnaire leaves out the option that we may have learned these skills in an informal setting. I was forced to choose between "not taught it" and "other" for improv and harmonizing skills. I hope you're careful with how you interpret the data you collect. =)
11. Yes, it is very poorly worded and written for pianists
12. Piano knowledge / proficiency are extremely important to anyone entering the field of music.
13. Accompanying students in your private studio is very helpful to them and to you as a teacher!
14. In my particular case, I wish that I had spent every minute of preparation time I had available at the piano, rather than my principal instrument--even though I enjoyed playing my principal instrument very much. But, I didn't know my career would take the direction that it did.
15. Answers in 5.1 are relevant in my field to jazz/vernacular piano styles, for instance transposing a salsa accompaniment, would be very valuable --- an accompaniment of Schubert much less practical or applicable.
16. I didn't answer Number 1. I need to practice.
17. Perhaps a more playful, improvisational approach to beginning piano might help new undergraduates feel less discouraged, especially if they have a lot of piano skills

- to catch up on. It's also good to remind students that they can improve their piano skills throughout their careers. It really helped me to realize this!
18. I think there should be a functional piano course for piano majors (and minors), to learn accompanying skills, harmonization skills and improvisation.
  19. I'm a guitarist and therefore have little to no use for functional piano skills. I can do it all on the guitar.
  20. I grew up playing both classical piano and improvisational chords. Unfortunately there are many trained classical pianists who cannot play by ear or with chords, which is often necessary when you play for a church or teach music in a public school. I deliberately teach my private piano students these improvisational skills so they do not feel hampered by the inability to play by ear. I received a good education through private piano lessons in college, but it was all classical.
  21. I think that part of my problem was that there were not enough hours in the day to get my violin practice in and then practice piano on top of it. It was really viewed as a bit of a joke and my teacher was not great and did not make it appealing. Having a better piano education would have been helpful but it did not impact the success that I have had with my students both in my school job and in my youth orchestra program.
  22. Group lessons aren't cutting it.
  23. I am not the typical statistic, because I had 13 years of continuous lessons prior to college and considered being a piano major. I also studied organ in graduate school and played at churches after grad school. My piano/ organ skills have kept me afloat since 1997, and I have never had to take a day or office job since leaving school. When I became independent as a private teacher, it was the piano students that kept a roof over my head and not the percussion students. I also see

so many vocal majors who don't have a clue about the piano, much less to accompany their own students. I have also known general music teachers who do not have enough skill to accompany the elementary school choir or music pageant. Strong Piano skills are an ESSENTIAL part for the survival of MANY musicians as well as very important for those in teaching positions. Majors should be required to study all 4 years, unless they pass a proficiency exam. The most frequently employed skill is that of accompanist. The specific skills I learned about reading I, IV, V; harmonizations, etc are not used in the marketplace. Sight reading and basic technical proficiency are.

24. The one thing that was useful about my one semester of group piano was the spoken relevance to ear training. Training (and the proficiency requirements themselves) needs to address whether you can play, not just whether you can sight-read.

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