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## The effects of peer teaching on undergraduate music majors' achievement and attitude toward sight-reading in the group piano setting

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THE EFFECTS OF PEER TEACHING ON UNDERGRADUATE MUSIC MAJORS'  
ACHIEVEMENT AND ATTITUDE TOWARD SIGHT-READING  
IN THE GROUP PIANO SETTING

A Dissertation

Submitted to the Graduate Faculty of the  
Louisiana State University and  
Agricultural and Mechanical College  
in partial fulfillment of the  
requirements for the degree of  
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in

The School of Music

by

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## ABSTRACT

The purposes of this study were: (1) to investigate the effects of peer teaching on students' achievement in sight-reading at the piano, and (2) to determine whether peer teaching positively affected students' attitude toward sight-reading at the piano. Participants were undergraduate music majors ( $N = 85$ ) enrolled in the second or fourth semester of a four-semester group piano sequence. Participants completed a pretest and a posttest that consisted of a video-taped sight-reading performance and an attitudinal questionnaire.

Control and experimental groups comprised the treatment groups for each level. Group Piano IV and Group Piano II participants in the experimental group were paired, creating 23 dyads. Dyads participated in eight peer teaching sessions across the semester; Group Piano IV participants served as tutors while Group Piano II participants served as tutees. Peer teaching sessions occurred outside scheduled class time and consisted of sight-reading duet and solo repertoire. The control group also participated in eight sight-reading sessions outside scheduled class time. These sessions were completed individually and did not involve peer teaching.

Two-Way ANOVAs with repeated measures revealed a significant difference due to the main effect of treatment groups in Group Piano II, but not in Group Piano IV. A significant difference due to the main effect of the test was found in both levels of group piano. A significant interaction between tests and treatment groups was found in Group Piano IV, but not in Group Piano II. Therefore, all participants significantly improved from pretest to posttest. This improvement only differed significantly across control and experimental groups for Group Piano IV, suggesting that peer teaching may positively affect peer tutors' achievement in sight-reading.

Two-Way Chi Square tests were calculated for each questionnaire item in both levels; one questionnaire item significantly changed in attitudinal response. Group Piano II participants

in the experimental group felt more confident maintaining continuity while sight-reading than at the beginning of the semester compared to Group Piano II participants in the control group. This study offers empirical evidence to support the idea that peer teaching may help increase peer tutees' confidence in maintaining continuity while sight-reading at the piano.

## CHAPTER 1

### INTRODUCTION AND REVIEW OF LITERATURE

#### Introduction

The piano is a basic tool for all musicians (Vernazza, 1967). College faculties, national music organizations, and music teachers are largely in agreement that adequate keyboard skills are both necessary and beneficial to undergraduate music majors regardless of their degree specialization. Keyboard competency is listed as a required skill for all students pursuing a professional baccalaureate degree in music schools accredited by the National Association of Schools of Music (NASM, 2007). Undergraduate music majors typically attain keyboard proficiency through the completion of group piano classes, and these classes are designed to aid students in the development of functional keyboard skills. Group piano classes have become a staple component in the undergraduate music curriculum, and the usefulness of these courses has been widely recognized (Chin, 2002).

Group piano surveys have revealed that sight-reading, accompanying, transposition, harmonization, score reading, improvisation, scales, chord progressions, and repertoire are the most common functional keyboard skills taught at the college level in the United States (Christensen, 2000; Skroch, 1991). Unfortunately, music majors have reported feeling ill-prepared in their ability to use the piano as a functional tool after having passed group piano classes or passing proficiency exams (Skroch, 1991). Christensen (2000) surveyed music education graduates and found that they would definitely utilize the piano as a teaching tool more frequently if they felt more confident, or proficient, in their functional keyboard skills. Buchanan (1964) investigated the attitudes of music educators concerning basic piano skills, and found that 64% of band and orchestra directors thought that their college training in piano was

inadequate. It seems that many students may graduate with music degrees feeling incompetent at the keyboard.

It is challenging for a student to become proficient in so many skills (sight-reading, accompanying, transposition, harmonization, score reading, improvisation, scales, chord progressions, repertoire, and so forth) in roughly four semesters. Vernazza (1967) contended that each functional keyboard skill could essentially be its own class, and Buchanan (1964) wrote that “the mastery of any one of these pianistic techniques, even to a moderate degree of proficiency, is a study in itself” (p. 136). Assuming that group piano instructors are faced with the difficult task of covering a multitude of skills in a limited amount of class time, it seems important that group piano instructors be well trained in group piano pedagogy. While some universities have begun to offer courses specifically designed for group piano instructor training (Bastien, 1988), the training of many group piano instructors is often limited to that of private teaching and little to no training in group teaching (Chin, 2002; Christensen, 2000; Lancaster, 1983; Uszler, 1992). The limited amount of instructional time for group piano classes in the undergraduate music major curriculum, the lack of keyboard proficiency reported by many graduates, and the limited group piano teacher training for many group piano teachers, leaves much to be examined concerning methods of instruction in the group piano classroom. Betts and Cassidy (2000) suggested that “one step in the process of designing comprehensive and efficient class instruction for developing functional piano skills among music education majors is to pinpoint critical areas for in depth coverage and practice in class piano” (p. 153).

One critical area that would benefit from in depth coverage is sight-reading at the piano. Chin’s (2002) survey of group piano instructors revealed that sight-reading was ranked first among skills that should be emphasized in class; some researchers even consider sight-reading to

be one of the most vital skills within a group piano curriculum (Hardy, 1995; Lowder, 1973). Furthermore, it has been suggested that students who sight-read well spend less time learning notes and rhythms when practicing other functional keyboard skills such as accompanying, score reading, and repertoire (Hunter, 1973). In an effort to continue the process of designing comprehensive and efficient class instruction for developing functional piano skills among undergraduate music majors, the present study focused on the functional keyboard skill of sight-reading while examining peer teaching as an instructional method.

The instructional model of cooperative learning has existed for centuries and has been thoroughly researched and developed as is reflected in the professional literature (Goldschmid & Goldschmid, 1976; Whitman, 1988). Cooperative learning can be defined as “students working together in teams constructing knowledge through problem solving and decision making” (Holloway, 2004, p. 83), and it is a term that encompasses many subsets of group learning, such as peer teaching (Whitman, 1988). Cooperative learning has been implemented in many learning environments, including the group piano setting. Fisher (2006) and Goliger (1995) both conducted dissertations involving qualitative research that incorporated cooperative learning into the group piano setting. Research shows that the incorporation of cooperative learning in general education typically enhances the learning experience for students (Coyne, 1978; Goldschmid & Goldschmid, 1976; Johnson, Johnson, & Holubec, 1988; Slavin, 1990; Smithee, 1989). Furthermore, it is also one method of managing academic heterogeneity in classrooms comprised of students with varying ability levels (Cohen, 1994).

Therefore, the purpose of this study was to investigate the effects of peer teaching, a subset of cooperative learning, on undergraduate music majors’ achievement and attitude toward sight-reading in the group piano setting. Primarily, the present study served to answer the

following questions: Is achievement in sight-reading at the piano enhanced by peer teaching? Is student attitude toward sight-reading at the piano affected by peer teaching? Does sight-reading achievement improve more for peer tutors or peer tutees because of peer teaching? Are peer tutors' attitudes affected more than peer tutees' attitudes toward sight-reading because of peer teaching?

Peer teaching is a subset of cooperative learning, and because cooperative learning has been so successful in other disciplines it seems reasonable for peer teaching to be explored in the group piano setting. The empirical research addressing cooperative learning in group piano classes is practically nonexistent, and investigation in this area could certainly lead to findings that might benefit the research community, group piano students, and group piano pedagogues.

#### Review of Literature

Group piano classes are designed to instruct and guide undergraduate music majors as they develop proficiency in numerous functional keyboard skills. The published research addressing group piano is a small but growing body of literature. Group piano research has been conducted regarding class size (Jackson, 1980), sight-reading (Betts & Cassidy, 2000; Cassidy, Betts, & Hanberry, 2001; Kostka, 2000; Lowder, 1973), harmonization (Betts & Cassidy, 2000; Vogt, 2005), practice strategies (Hanberry, 2004), and improvisation (Laughlin, 2004; Montano, 1983). Other group piano research includes instructor training (Chin, 2002; Richards, 1962), instructional techniques (Hunter, 1973; Kim, 2000), and the development and organization of group piano programs (Exline, 1976; Lancaster, 1983; Lyke, 1968).

Because this investigation sought to determine the effects of peer teaching in relation to the functional skill of sight-reading in the group piano setting, this review of literature begins with a brief synopsis of the history of peer teaching. Given that peer teaching is so closely related



to cooperative learning, and that this method of instruction was first explored in general education, studies are discussed regarding peer influence, cooperative learning, and peer teaching both outside and inside the discipline of music. Following is a section that addresses the pros and cons of peer teaching. The next section is devoted to the importance of sight-reading at the keyboard, and the final section is dedicated to the apparent need for implementing cooperative learning methodologies, such as peer teaching, into the group piano curriculum.

### The History of Peer Teaching: A Brief Overview

The concept of peer teaching is not new. In fact, the origins of peer teaching can be traced back to the ancient Greek philosopher, Aristotle (384 B. C. – 322 B. C.). Aristotle used archons, or student leaders, to help other students comprehend philosophical concepts (Wagner, 1982). According to Whitman (1988), there is limited published material concerning peer teaching until the latter half of the 20<sup>th</sup> century. Some published studies concerning peer teaching, however, make references to the late 1800's and early 1900's when it was common for students of all levels and ages to gather in one-room school houses for instruction (Ehly & Larsen, 1980; Lippitt & Lippitt, 1968). Peer teaching occurred in this setting as the older students frequently taught the younger students. It was unrealistic for the teacher of a one-room school house to instruct all ability levels simultaneously (Whitman, 1988). According to Lippitt and Lippitt (1968), teachers of one-room school houses recognized the benefits of peer teaching, hoping that younger students would excel due to one-on-one instruction and that older students' academic achievement would also improve because of added responsibility and reinforcement of basic concepts gained from teaching.

Since the 1950's, college faculties have recognized benefits of peer teaching (Newcomb, 1962). Originally, peer teaching was implemented into the academic curriculum at the university

level because professors were dissatisfied with students' passive role in large lecture classes (Goldschmid, 1970). More specifically, psychology professors found a large disconnect between what was taught in psychology and the way classes were run at the university. University students were being taught the importance of actively involving students in the learning process, yet material was presented to the university students as they sat passively in large lecture courses (Wrigley, 1973).

Many types of peer teaching began to occur at the university level in the latter half of the 20<sup>th</sup> century in order to move away from passive learning. For example, discussion groups, seminar groups, learning cells, and outline groups began to take place at the undergraduate level. Discussion groups involved anywhere from six to twelve students, and student groups met regularly outside of class to informally review concepts and to ask each other questions. Seminar groups, comprised of ten to twelve students, met weekly so that students could present papers on concepts addressed in class, and presentations were typically followed by seminar group discussions. Learning cells were comprised of pairs only, and pairs met to discuss class material. Often, pairs would rotate from week to week. Students would attend outline and essay groups with reading materials already in an outline or essay form; students would discuss concepts by comparing their written content. Creating environments that promoted student interaction was a way to avoid passive learning (Goldschmid, 1970).

The first published literature review of college peer teaching revealed that experimentally controlled efforts regarding cooperative learning were not common in the United States until around 1960 (Goldschmid & Goldschmid, 1976). The following section addresses empirical research involving cooperative learning (of which peer teaching is a subset) in the latter half of the 20<sup>th</sup> century.

### Peer Influence, Cooperative Learning, and Peer Teaching in General Education

Peers are extremely influential, and this influence can be a powerful tool in education. Evans and Oswalt (1968) examined the effects of peer influence on spelling achievement in a fourth grade classroom over a thirteen week period. The class participated in weekly spelling tests. The first four weeks served as baseline data; spelling grades were recorded, but treatment was not introduced. After four weeks of baseline tests, the spelling teacher identified two students as being “capable of doing considerably better work than they are presently doing” (p. 189). During weeks five through nine, treatment consisted of the teacher asking the first identified student to spell a word in front of the class. If the student spelled the word correctly, the class was dismissed five minutes early for recess. If the student misspelled the word, the class was dismissed for recess at the regularly scheduled time. During weeks ten through thirteen, treatment consisted of the teacher asking the second identified student to spell a word in front of the class. Incentives remained the same. Achievement in spelling significantly improved for both of these students during the weeks they spelled words in front of their peers. After treatment stopped, however, performance in spelling returned to that of each student’s baseline score. Although the personal incentive of going to recess early may have affected these results, it seems that peer influence may have had reinforcing properties for the low-achieving students. Evans and Oswalt (1968) conducted the same design in a math class, a social science class, and a general science class and found similar results.

Many students are not affected by approval or disapproval from teachers, yet are strongly influenced by peer approval and disapproval. Peer models have been successful in many circumstances and environments, and peers have been used to increase study time in tutorials, to reduce aggression, and to help modify verbal outbursts (Netherland, 1975). Additionally, peer

influence and peer interaction play a vital role in cooperative learning. Slotnick, Jeger, and Schure (1981) examined the incorporation of cooperative learning into the curriculum of large psychology classes at the undergraduate level. The participants in this study were either part of a control group or a treatment group. The control group was instructed via a traditional lecture method twice a week while the experimental group attended a lecture class only once a week and then met in small groups outside of class in lieu of the second weekly class meeting. Small groups had four students each, and students discussed course material and prepared for examinations as a group. Treatment lasted for an entire semester. By three separate measures – quizzes, midterm, and a final – students in the experimental group performed higher than students in the control group at a statistically significant level. Thus, this study reflects positive outcomes of cooperative learning. Tighe (1971) echoed these positive outcomes when he stated that “Real learning ... is not a solitary task” (pg. 22).

Peer teaching has been utilized in numerous environments such as writing centers (Rizzolo, 1982), medical schools (Walker-Bartnick, Berger, & Kappelman, 1984), and industrial engineering (Bailey, 1986). Peer teaching also occurs in families (Carey, 2007), as tutoring is a natural role for older siblings. Furthermore, many types of students have benefited from taking on the role of “tutor.” Students in special education, students in need of academic remediation, students with behavior disorders, and students with learning disabilities have all acted as tutors (Devin-Sheehan, Feldman, & Allen, 1976; Madsen, Smith, & Feeman, 1988; Mcgee, Kaufman, & Nussen, 1977). Therefore, peer teaching can be applied in various environments as well as to people with diverse backgrounds and varying ability levels.

Coyne (1978) investigated the effects of peer tutoring in an undergraduate summer psychology class. Students were placed in either a control group or an experimental group, and

students in the experimental group were rank ordered into one of three levels (low – L, middle – M, or high – H) based on pretest scores. Subsequently, students in the experimental group were paired in all possible combinations: H-H, M-H, M-M, M-L, H-L, or L-L. Students studied for exams in their pairs with the incentive that if both people in a pair received a score of 90 or above, then they would each receive bonus points toward the final exam. If both members of a pair scored consistently above 90 throughout the semester, then they would be exempt from their final exam. Students in the control group studied independently; they received the same payoffs and bonuses as the students in the experimental group who studied in dyads. Posttest scores showed that students in the experimental group scored significantly higher than students in the control group on all exams throughout the semester.

In the aforementioned study, peer teaching pairs were enrolled in the same class. Other studies, though, have examined peer teaching between students of varying ages and levels. For example, Morgan & Toy (1970) explored the effects of peer teaching on reading, spelling, and math achievement in a rural school system over a four month period. Peer tutees were pupils in the second through fifth grades and peer tutors were pupils in the eighth through twelfth grades. Results showed that participants involved in peer teaching, both tutors and tutees, improved significantly on reading, math, and spelling achievement when compared to pupils in a control group who were not involved in peer teaching. Similarly, Klosterman (1970) explored the effects of peer teaching on reading achievement when tutees were fourth graders and tutors were undergraduates. Results showed a significant increase in the reading achievement scores for the students being tutored. Peers are great resources, and “our greatest reservoir of ideal and cheap talent is clearly the students themselves” (Wrigley, 1973, p. 5).

### Peer Influence, Cooperative Learning, and Peer Teaching in Music Education

As research has displayed the influence of peers in disciplines such as math, science, and reading, research has also revealed the influence of peers in the discipline of music. Flohr and Brown (1979) examined the way preschool and kindergarten children moved to music with and without blindfolds in order to determine the influence of peer imitation on expressive movement. When children did not wear blindfolds, they moved much more similarly to one another than when they did wear blindfolds. Results of this study gleaned that “peer imitation significantly influences expressive movement of both preschool and kindergarten children” (p. 147).

Studies have shown that high school students can be influenced by their peers in a music setting. Hanser (1982) investigated the effects of peer approval and disapproval on improvement of pitch-matching. The participants were eighty high school students who took part in a pitch-matching training program. All of the students completed a pitch-matching pretest; the students who fell within the top twenty scores were pulled from the sample, selected to assist the experimenter, and referred to as confederates. The confederates were trained to give approval or disapproval after participants matched pitch. As a purposeful part of the experimental design, feedback from the confederate was not always consistent with student performance. Results showed that confederates’ approval and disapproval affected participants’ subsequent pitch-matching achievement. As confederates offered approval to tutees, the tutees’ pitch-matching ability gradually improved. Contrastingly, as confederates offered disapproval to tutees, the tutees’ pitch-matching ability gradually worsened.

Peer influence is a main element of cooperative learning. Discussing and asking questions about concepts with other peers may influence student achievement. For example, Holloway (2004) examined the effects of cooperative learning on the acquisition of listening

skills in music appreciation classes. Three college music appreciation teachers used their intact classes as participants ( $N = 88$ ). Half of the participants comprised the control group and the other half comprised the experimental group. The classes in the control group were instructed using the traditional lecture method. Classes in the experimental group, however, were instructed using a cooperative learning method that incorporated group listening and discussion. Additionally, students in the experimental group were placed in cooperative action learning groups of four students each that met outside of class to listen to music, discuss and answer questions about music, and to compose as a group. Scores for students in the experimental group were significantly higher than those in the control, or lecture groups. The results of this study support the incorporation of cooperative learning in music classes.

Peer teaching at the college level in music has been explored in several areas. Paul (1998) investigated the effects of a two-year peer teaching conducting laboratory at the University of Oklahoma where second-year students taught first-year students basic skills of conducting and pedagogy. This laboratory experience devoted fifty minutes three times a week to peer teaching. Peer teaching occurred in a variety of ways: in pairs, in groups of five, and in larger groups of twelve to fourteen. This study was largely qualitative in nature and followed three students through a series of interviews and observations. Results indicated that extended peer teaching experiences assisted students in constructing knowledge about teaching. Additionally, the teaching laboratory prepared students for the teacher role by having multiple opportunities to “perform as a teacher performs” (p. 76).

While not the primary focus of the following research, peer teaching was a factor in the treatment for a study involving introductory music education majors (Butler, 2001). Butler incorporated two microteaching experiences into participants’ curriculum as one part of a

treatment in order to examine teacher effectiveness. The first microteaching experience consisted of peer teaching in which undergraduate music education majors taught a short portion of a song to their peers after receiving instructional training on how to teach rote songs to others. The second microteaching experience required students to teach the same song by rote to a junior choir. Qualitative results suggested that microteaching experiences may assist students in developing a better understanding of what it means to teach.

A few empirically based research studies have investigated peer teaching or cross-age tutoring in the field of music education (Alexander & Dorow, 1983; Darrow, Gibbs, & Bonner, 2005; Madsen et al., 1988). Alexander and Dorow (1983) conducted the first published peer teaching study in music education. In fact, Alexander and Dorow stated in their review of literature that “no peer tutoring studies have been published in music education” (p. 34). In this study, fourth grade beginning band students were placed in tutor/tutee dyads based on pretest performance scores. Students in the top-scoring half of the pretest were designated as peer tutors and students in the bottom half were designated as peer tutees. A control group was also created to serve as a comparison for students in peer teaching dyads. Students were randomly assigned to one of two treatment groups. In one treatment group, tutors were trained to provide positive feedback to tutees. In the other treatment group, tutors were trained to provide negative feedback to tutees. Tutor approval and disapproval aside, all peer tutored students scored higher on posttest performance playing exams than those who had not been tutored by their peers. More specifically, tutees improved significantly in comparison to tutors, and those tutored in conjunction with approval techniques made the greatest performance gains out of all participants.

Madsen et al. (1988) examined the effects of cross-age tutoring between disruptive special education elementary students (fourth and fifth graders) and kindergartners with low



scores on the *Leon Inventory of Kindergarten Entering Skills Exam*. While participation in tutoring was voluntary for the fourth and fifth grade tutors, the opportunity to listen to music on headphones was used as an incentive to encourage peer tutoring participation. Cross-age tutoring yielded positive results both academically and socially for tutors and tutees. Furthermore, undergraduate and graduate music therapy students viewed the videotaped peer tutoring sessions, and the majority of them remarked at how gifted, positive, and socially appropriate the fourth and fifth graders acted while tutoring. Thus, cross-age tutoring may benefit troubled students by giving them responsibilities and placing them in leadership roles.

Darrow et al. (2005) investigated the effects of peer teaching in the elementary music classroom. Fifth grade students ( $N = 104$ ) were given a pretest on key signatures and then paired into dyads. Students in each dyad had the opportunity to be both the tutor and the tutee. Peer teaching occurred across two general music class periods and students reversed roles during the second peer teaching session. During the first peer teaching session, one student from each dyad guided the other student in completing a flat key worksheet. During the second peer teaching session, a student guided the other student in completing a sharp key worksheet. After treatment was completed, all students took a posttest on key signatures. All students scored higher on the posttest than the pretest, but results showed no significant difference in achievement between tutor and tutee. This study did not have a comparison group comprised of students that were not involved in peer tutoring. Results of this study, however, suggest that students can effectively teach musical concepts to one another.

#### The Pros and Cons of Peer Teaching

“Creating opportunities for students to teach each other may be one of the most important services a teacher can render” (Whitman, 1988, p. v). Furthermore, students must learn how to

learn collaboratively, and the only way to improve cooperative learning skills is for teachers to provide numerous opportunities for students to practice them.

Peer teaching often results in gains for all parties involved (Paul, 1998; Morgan & Toy, 1970). While some literature claims that the tutee benefits more than the tutor (Klosterman, 1970), other literature concludes that the tutor reaps the majority of the benefits (Gartner & Reissman, 1994). McGee et al. (1977) stated that “It has become axiomatic to claim that the therapist [tutor] benefits at least as much as his client [tutee] from such a helping relationship” (p. 472). It remains inconclusive as to which party excels more because of peer teaching (Devin-Sheehan et al., 1976), but it is reasonable to say that both tutor and tutee make gains to some degree.

One of the best ways to learn, or to deeply understand a given concept, is to teach it (Martin, 1981). In fact, Aristotle said that “teaching is the highest form of understanding.” Teaching a concept requires one to look at material from a different angle. More specifically, peer teaching creates a situation where the peer tutor has to develop his or her own ideas and thoughts about a concept, and then explain it to peers (Wiggins, 1994). First, the tutor must review the material. Second, the tutor must organize the material to be presented. Finally, the tutor may need to seek out the basic structure of the material in order to teach it, and in doing so, may gain a better understanding of it (Gartner, Kohler, & Reissman, 1971). Hence, “learning is strengthened when one is called upon to teach” (Fisher, 2006, p. 69).

Peer teaching creates a relationship between learners. It often produces fruitful results because peers have the ability to be incredibly influential (Evans & Oswalt, 1968; Flohr & Brown, 1979; Hanser, 1982). A peer, unlike a teacher, is still experiencing life as a student. “Thus, tutor and tutee are more likely to see each other as equals and to create an open,

communicative atmosphere, even though the peer tutor is [usually] a more advanced student” (Hawkins, 1980, p. 66). Aside from being approximately the same age, peers also enroll in the same classes, work on the same assignments, and study with the same teachers. Because of these commonalities, a closeness between peers exists that cannot occur between student and teacher (Goldschmid & Goldschmid, 1976). As a result, working with peers often produces a sense of belonging. This sense of belonging creates intrinsic motivation (Bergee, 1993; Coats, 2006; Fisher, 2006; Goliger, 1995), and intrinsic motivation in the material to be learned is one of the best stimuli to learning (Bruner, 1960).

Additionally, peer teaching increases students’ levels of active involvement in the teaching and learning process (Whitman, 1988). Peer teaching requires students to be participants in the learning process – to be “users of, rather than recipients of, education” (Knox, 1980, p. 79). Dewey (1916) stated that “Education is a constant reorganizing or reconstructing of experience” (p. 76). Students are reconstructing information when they verbally explain a concept, and this process of reorganization helps to solidify knowledge while simultaneously understanding that knowledge on a deeper level (Cohen, 1994). Peer teaching encourages students to become involved with subject matter at all stages of Bloom’s taxonomy of learning. “In working together, students are required to discuss, explain, interpret, demonstrate, relate, generalize, compare, and justify their understandings” (Kassner, 2002, p. 18). The French philosopher Joseph Joubert wrote, “to teach is to learn twice” (Raimi, 1981, p. 59).

Beyond verbalizing a concept, Benware and Deci (1984) suggested that the actual mental processes involved in learning or preparing to teach a concept differs from simply learning the material. To test this hypothesis, Benware and Deci had college students take an exam over an article on brain functioning. The control group and the experimental group were told to read and

study the article in preparation for an exam. The experimental group was also told that they would teach the material they learned from the article to another student. Even though the experimental group was never given the opportunity to teach or verbalize the material, they significantly outscored the control group on the exam. Annis (1983) conducted a similar study. The participants in the control group of Annis's study prepared the contents of an article for the purposes of teaching it, yet never received the opportunity to teach. Likewise, the experimental group also prepared the contents of an article for the purposes of teaching it, but actually had the opportunity to do so. Both control and experimental groups were tested over the contents of the article, and the experimental group scored significantly higher than the control group.

In addition to the cognitive benefits gained from preparing to teach, including verbally expressing a concept, peer teaching also aids in the development of collaborative skills necessary for working effectively with others (Chin, 2002; Johnson et al., 1988). Learning to live cooperatively is a beneficial tool for all students regardless of their future career paths (Goliger, 1995). Students who have had many opportunities to work with peers may be more likely to transfer cooperative learning skills to other situations than students who have had few cooperative learning experiences. Thus, peer interaction should play an integral role in the classroom setting (Wiggins, 1994).

Peer teaching experiences aid in bridging the gap between the theoretical and the practical. Roulston, Legette, & Womack (2005) reported that music majors had difficulty applying the theory of what they learned in the classroom to the present realities of their work contexts. Studies have found peer teaching experiences to be both valuable and practical, connecting theory to real world applications (Butler, 2001). If music educators are to prepare students to make transfers, it is essential that they see the connection between peer teaching and

the content of the class (Farris, 1991). Additionally, peer teaching creates a chance for students to “do” what they are learning (Dewey, 1963).

There are many reasons for incorporating peer teaching into a curriculum. Peer teaching is economical, and students are a great resource. Peer teaching is an inexpensive way to have small classes within a larger class (Whitman, 1988), and it is also easier to implement than field teaching (Colwell, 1995). Moreover, research has shown that students who take on the role of the teacher not only benefit academically, but also socially and behaviorally (Cohen, 1994; McGee et al., 1977; Whitman, 1988). Baker (2002) observed that frequent contact with peers creates an atmosphere of diversity, and that peer learning shapes a wide variety of behaviors, attitudes, and perspectives (Goliger, 1995; Kassner, 2002). Additionally, peer teaching has been shown to increase self-confidence (Farris, 1991; Goliger, 1995; Johnson et al., 1988), foster positive attitudes (McGee et al., 1977), cultivate creativity (Allsup, 2003; Claire, 1993), and create friendships and mutual regard among students of different ages (Lippit & Lippitt, 1968). Finally, students seem to enjoy peer teaching. There are numerous research studies to suggest that peer teaching yields positive attitudinal responses (Butler, 2001; Colwell, 1995; Fisher, 2006; Paul, 1998).

While multiple reasons have been documented to support peer teaching, it is also important to note some drawbacks that may result from peer teaching. One drawback to peer teaching is that it requires a lot of effort from the teacher (Kassner, 2002). For example, the coordination of peer teaching activities, especially if they occur outside of class, can consume a significant amount of an instructor’s time. The number of hours it takes to match and accommodate students’ schedules, deal with absences and make-up sessions, organize

classrooms for meetings, and create and distribute instructions to all those involved in the peer teaching process can add up across a semester (Fisher, 2006).

Consideration should be given to the possibility that peer teaching may not be beneficial if it is only implemented one or two times. Darrow et al. (2005) conducted a study that incorporated peer teaching activities in a general elementary music classroom for only two class periods. Results suggested that student involvement in peer teaching activities for only two class periods may not be enough time to warrant significant improvement in musical achievement among peer tutors and peer tutees. Webb (1997) contended that in order for peer teaching to be effective, it needs to occur consistently and frequently – across several weeks, a semester, or even an entire year. Peer teaching activities, then, may require more time to unfold when compared to direct instructional techniques, such as the lecture format.

For some instructors, another drawback of peer teaching may be the role change from teacher to facilitator. According to Fisher (2006) instructors must continually reinforce positive interdependence among students involved in peer teaching activities, as this attitude is often not a natural disposition. When peer teaching activities are employed, it becomes necessary for instructors to relinquish some of their control over the learning process and to facilitate peer teaching activities; this may prove to be a challenge for some instructors.

It is also possible for poor student learning to occur from peer teaching if the personalities or learning styles of the students who are paired together are not compatible. Furthermore, peer tutees may receive incorrect instruction from peer tutors, as peer tutors are not certified instructors and can inadvertently provide incorrect information (Secumb, 2008). Additionally, students should only be placed in peer teaching situations if their behavior is considered conducive to a healthy learning environment. Some peers can be overly critical and

judgmental (Bergee, 1993; Butler, 2001), and from time to time peer groups can take on their own personalities, some of which are unhealthy (Smialek & Boburka, 2006). It often takes time for students to develop the social skills that are necessary for a positive peer teaching environment.

Despite some of the drawbacks that may result because of peer teaching, research reveals that the pros to implementing peer teaching in the classroom overshadow the cons. Fisher (2006) stated that “the benefits [of peer teaching] far out-weigh the challenges” (p. 80). Careful consideration should be given to the structure and implementation of peer teaching so that it is designed to be a healthy, successful experience for all those involved.

#### Sight-Reading as a Functional Skill in Group Piano

Developing music literacy is a fundamental characteristic of any undergraduate music program. Often, a musician is considered musically literate if he or she is technically competent, artistically mature, and able to perform repertoire at the professional level in at least one major performance area. While proficiency in a specified performance area is important, performance is but one of many aspects that comprises music literacy. All musicians pursuing a professional baccalaureate degree in music need to acquire a common body of knowledge and skills in addition to their area of specialization (NASM, 2007). “Keyboard competency” (p. 85) is a component included within this common body of knowledge. A musician needs to be capable of sight-reading, improvising, transposing, composing, and harmonizing at the keyboard (Vogt, 2005). Buchanan (1964) stated that “unless a person has had experience in improvising, playing by ear, harmonizing, playing accompaniments, reading scores, and sight-reading, he is not sufficiently educated in piano performance to be a music educator” (p. 138). Furthermore, all

music students – regardless of degree specification – need to become proficient at the keyboard and develop basic functional skills (Johnson, 1987).

Sight-reading has been defined as “the performing of a piece of music on seeing it for the first time” (Randel, 2003, p. 780), and most musicians would agree that the ability to sight-read at the keyboard is a beneficial skill. Lowder (1973) considers sight-reading at the keyboard to be one of the most vital skills within a group piano curriculum, since the ability to sight-read benefits a musician in numerous ways. For example, it can cultivate a broader knowledge of music (Hunter, 1973) and enhance the speed with which one can learn new repertoire in addition to building tactile, aural, and kinetic memory (Hardy, 1995).

Studies in sight-reading have revealed that specific methods of preparation before sight-reading can lead to better sight-reading performances. Skornicka (1972) conducted research in keyboard sight-reading that revealed tapping the rhythm in both staves may lead to higher accuracy when sight-reading. McPherson (1994) found that high school clarinet and trumpet students who determined key and time signatures prior to sight-reading performed better than those who did not. Other research has also suggested that identifying patterns in the score prior to sight-reading can aid in improving sight-reading accuracy (Goolsby, 1994; Gromko, 2004).

Sight-reading research within the group piano setting is relatively sparse. Kostka (2000) examined the effects of three different sight-reading methods on the sight-reading achievement of undergraduate music majors enrolled in group piano. Group piano students were divided into three groups and instructed via three separate methods. The first method of instruction consisted of practice in error detection and keyboard shadowing. Error detection required students to listen to piano excerpts while following a score and to mark rhythmic errors and note errors where applicable. Keyboard shadowing referred to placing one’s hands on the keyboard while moving



the fingers as if playing the piano; the difference was that the fingers did not depress the keys and a sound was not produced. The second method consisted of keyboard shadowing only. The third method served as a control group, instructing students to practice sight-reading using methods of self-guided practice. All subjects participated in a pretest and a posttest, and treatment was implemented in all three groups for a total of five separate times over the course of the semester. Pretests and posttests were evaluated for correct notes, correct rhythms, and number of hesitations. All three groups showed gains in rhythmic and note accuracy, yet no group significantly excelled beyond another due to treatment. Students in the group receiving the error detection plus shadowing treatment, however, did show more improvement than the other two groups. Interestingly, the number of hesitations from the pretest to the posttest remained fairly stagnant in all three groups.

Lowder (1973) examined the effects of teaching standard right-hand triad fingerings on undergraduate music majors' ability to sight-read. Four group piano classes of undergraduate music majors were involved in this study. All four of the classes received similar sight-reading instruction, but two of the classes received additional training in playing and fingering right-hand triads. For example, a root position triad was taught with the right-hand fingering 1, 3, and 5; a first inversion with 1, 2, and 5; and a second inversion with 1, 3, and 5. Lowder hypothesized that repeated practice in identifying, fingering, and playing vertical triads in all inversions would improve sight-reading achievement scores. All subjects participated in a sight-reading pretest and posttest. Results showed no significant increase in sight-reading ability for the group receiving additional fingering instructions.

Betts & Cassidy (2000) explored the development of sight-reading and harmonization skills among music majors. All subjects, 39 undergraduate music majors enrolled in group piano,

participated in a pretest and a posttest in which they were videotaped performing two harmonization exercises (one more difficult than the other) and two sight-reading exercises (again, one more difficult than the other). Pretests occurred during the beginning of the semester while posttests occurred near the end. Though not the primary focus of the study, students were also divided into two groups: (1) those receiving instruction in harmonization in conjunction with MIDI accompaniments; and (2) those receiving instruction in sight-reading in conjunction with MIDI accompaniments. This was done to determine whether the utilization of MIDI accompaniments improved achievement in sight-reading and harmonization. Aside from the use of MIDI in the presentation of sight-reading or harmonization, the remainder of the instruction was similar for all students across the semester. Videotaped pretests and posttests were analyzed according to pitch and rhythmic accuracy. Analysis was computed between tests, task, right-hand and left-hand, and MIDI group. Results showed that the right-hand was more accurate than the left-hand, that the right-hand improved less than the left-hand between pretest and posttest, and that the right-hand performed better on harmonization exercises than sight-reading exercises. No significance was found according to the use of MIDI accompaniments.

#### A Case for Peer Teaching in Group Piano Instruction

An advisory report submitted to the National Educational Research Policy and Priorities Board of the United States Department of Education encouraged new methods of research to focus on teaching techniques that explore learning in a variety of contexts (Luce, 2001). The report suggested shifting from more traditional, individualistic learning approaches to a more collaborative learning style: “Music education needs a community of knowledgeable peers to begin and then continue to discuss and engage in collaborative learning within and outside of the discipline” (p. 24). Furthermore, music research involving collaboration among peers is both

meaningful and applicable to researchers and practitioners alike. Unlike music research that targets a more narrow purpose, such as skill tests or preference scaling, research involving peer collaboration is useful in many classroom settings (Adelman, 1994).

Duckworth (1999), a leading piano pedagogue in group teaching and learning for all ages and levels, stated the following about group instrumental instruction:

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.

(p. 17)

Similarly, Lancaster (1983) contended that some of the main reasons for the implementation of group piano instruction at the collegiate level were so that peers could learn from one another and practice taking on leadership and teaching roles as part of the undergraduate experience.

The term “group piano” seems to imply that peer interaction is a common occurrence in the class. Chin (2002), however, conducted an online survey of 1,471 group piano instructors whose names appeared in the *College Music Society Directory 2000-2001* and found that peer interaction in group piano classes at the collegiate level was not necessarily a common occurrence. Of the 1,471 group piano instructors in the directory, 600 group piano instructors were selected via random sampling; the results of Chin’s survey were based on 304 responses. The survey reported that approximately 80% of all instructional methods in group piano consisted of students playing individually while wearing headsets, and that overall,

undergraduate music majors enrolled in group piano did not have enough opportunities to interact with their peers in the group piano setting. In accordance with Chin, Coats (2006) stated that the constant use of headphones was a common occurrence in collegiate group piano classes and that their use often isolated students from one another. Uszler (1992) stated that “instruction in a piano lab, with each student on headphones communicating only with the teacher, is really not considered group instruction” (p. 587).

Similarly, Miranda (2000) found that peer interaction did not necessarily occur naturally in group piano classes for children. Miranda studied the extent to which the Yamaha music curriculum paralleled Developmentally Appropriate Practice according to the standards of the National Association for the Education of Young Children. While children met in group piano classes as part of the Yamaha music curriculum, a minimal amount of peer interaction was observed in the study. Peer interaction, it seems, needs to be cultivated; it does not occur simply because more than one student gathers for a class.

It seems overwhelmingly evident that there is a dearth of empirical research which examines cooperative learning effects in group piano settings. Descriptive research is extant in this area, but the studies are few. Goliger (1995) implemented a program of cooperative learning in an urban secondary piano laboratory throughout an entire academic year. Piano lessons were taught in groups, and students practiced together in teams. A daily log was kept to record students’ comments and progress, and practice groups were periodically videotaped and analyzed. Goliger incorporated group activities, such as tournaments and games, into the curriculum, and students received grades both as individuals and as groups. Group grades reflected group and individual accountability. After students had completed the cooperative learning program for an academic year, their final exam scores and their final semester grades

were compared with students' grades from eight prior classes. These prior classes had been taught in a traditional manner and had not participated in a cooperative learning program. Consequentially, students who participated in the year-long cooperative learning program made substantially higher scores than students who did not. Additionally, the students who were involved in cooperative learning groups had fewer issues with absences, tardiness, and warning notices.

Fisher (2006) presented and informally tested five different collaborative activities explicitly designed for undergraduate music majors in the group piano classroom. The activities were: (1) Technique Tournament, (2) Sight Reading Drill Pairs with Eye Check, (3) Harmonization: Think-Pair-Share, (4) Improvisation: Creative Activities, and (5) Solo and Ensemble Repertoire. Each cooperative learning activity was conducted in teams or groups of three to five members, and students completed questionnaires after each activity. Generally, students responded with positive feedback for each of the activities. A noted positive outcome of working collaboratively was the impact it had on weaker students in the class. Weaker students who would have probably failed the course were most likely spared from failing due to the nurturing and support of their peers through group accountability. Fisher recommended that further research be conducted in an attempt to evaluate the potential benefits and effectiveness of cooperative learning and its application to group piano.

To summarize, many factors support the need to examine students' proficiency and attitude toward the keyboard skill of sight-reading as it is approached via peer teaching in the group piano classroom. First, little empirical research exists regarding this issue. Second, sight-reading is an essential skill for keyboard proficiency. Third, peer teaching has been successful in other disciplines. Therefore, the purpose of this study was to examine the effects of peer teaching

on undergraduate music majors' achievement and attitude toward sight-reading in the group piano setting.

The following research questions were examined in this study: Is achievement in sight-reading at the piano enhanced by peer teaching? Is student attitude toward sight-reading at the piano affected by peer teaching? Does sight-reading achievement improve more for peer tutors or peer tutees because of peer teaching? Are peer tutors' attitudes affected more than peer tutees' attitudes toward sight-reading because of peer teaching?

## CHAPTER 2

### METHOD

The purposes of this study were twofold. The first was to investigate the effects of peer teaching on student achievement in sight-reading at the piano. For this study, student achievement in sight-reading was defined as students' abilities to play accurate pitches and rhythms while maintaining continuity as they sight-read at the piano. The second purpose was to determine whether peer teaching positively affected students' attitude toward sight-reading at the piano.

#### Participants

The participants for this study were non-keyboard music majors ( $N = 91$ ) enrolled in either their second semester ( $n = 44$ ) or their fourth semester ( $n = 47$ ) of a four-semester group piano sequence at Louisiana State University in the spring of 2008. Participants were eliminated from the study if they withdrew from the class or did not complete the posttest. This resulted in a usable sample of  $N = 85$  with  $n = 39$  in Group Piano II, the second semester of group piano, and  $n = 46$  in Group Piano IV, the fourth semester of group piano.

Four sections of Group Piano II and four sections of Group Piano IV were offered during the semester that data were collected. Students registered for classes according to scheduling preferences, and at the time of class registration students were not aware of treatment conditions. All undergraduate music majors participated in a diagnostic keyboard exam to assess keyboard competencies that either placed them in one of four levels of the group piano sequence or exempted them from all group piano classes. Placement exams created a relatively homogenous level of keyboard proficiency among students in each level of the sequence.

As mandated by federal law, exemption from institutional oversight was granted from the Louisiana State University Institutional Review Board (IRB) for Human Subject Studies. During the first week of the semester, students in all eight sections of group piano had the option of signing a consent form that served as their agreement to participate in the study. All students willingly signed the consent form. Copies of the IRB exemption and a sample consent form are included in Appendix A.

### Setting

Treatment for this study was nested within the group piano sequence for music majors. Group piano classes met for fifty minutes twice a week for all sections and levels in the group piano sequence. Instructional time was divided among the following functional keyboard skills: sight-reading, transposition, accompanying, harmonization, open-score reading, scales, chord progressions, and piano repertoire. Students in Group Piano II used *Alfred's Group Piano for Adults, Book 1* (Lancaster & Renfrow, 2004) as their primary text while students in Group Piano IV used *Alfred's Group Piano for Adults, Book 2* (Lancaster & Renfrow, 1996) as their primary text. Additional materials were used to supplement the text at the discretion of the instructors. A detailed academic calendar ensured that concepts and exercises were presented in a similar order across all sections of the same level.

A total of four group piano instructors taught the eight sections of group piano involved in this study. The investigator taught the two experimental and two control groups of Group Piano IV. Graduate teaching assignments for the spring of 2008 assigned three different instructors to teach the four sections of Group Piano II. A graduate assistant pursuing a Master of Music (MM) degree in piano pedagogy was assigned to teach the two experimental sections of Group Piano II. A graduate assistant pursuing a MM degree in piano performance and a graduate



assistant pursuing a Doctor of Musical Arts (DMA) degree in piano performance were assigned to teach the two control sections.

All classes were held in the keyboard lab at Louisiana State University. In the lab, there were twelve Roland digital keyboards equipped with headphones and connected to a Roland instructor keyboard and console. The instructor keyboard had a Musical Instrument Digital Interface (MIDI) disk player, and instructors had the option of using MIDI disks that accompanied the text. A Yamaha *Clavinova*, a Yamaha *Disklavier* acoustic piano, an overhead projector, and dry erase staff boards were also available for instructional use.

### Treatment

In order to isolate the effects of peer teaching on achievement and attitude, intact classes were labeled as either experimental or control. Students in sections 1 and 2 of Group Piano II and sections 3 and 4 of Group Piano IV comprised the experimental peer teaching group ( $n = 23$  and  $n = 23$ , respectively) while students in sections 3 and 4 of Group Piano II and 1 and 2 of Group Piano IV comprised the control group ( $n = 16$  and  $n = 23$ , respectively). The investigator created peer teaching dyads in the experimental group by pairing a Group Piano IV student (tutor) with a Group Piano II student (tutee). Hence, 23 pairs were created in all.

Each peer teaching pair participated in eight sight-reading sessions across the semester. During each session, the tutor in each pair guided the tutee through sight-reading exercises. The investigator selected the sight-reading materials for each session; the difficulty level of this material was determined based on the level of the sight-reading exercises that the Group Piano II students played in class. (A bibliography of the sight-reading materials used in each session can be found in Appendix B.) Every Thursday during regularly scheduled group piano class, Group Piano IV tutors received a peer teaching packet for the following week to prepare for these

sessions. Each peer teaching packet included: (1) a detailed task analysis for the peer teaching session (Appendix C), (2) two duets for tutors to sight-read with their tutee, and (3) two or three short solo exercises that tutors discussed with their tutees and guided them through sight-reading. An example of a peer teaching packet can be found in Appendix D. Letters granting permission to reprint the music found in Appendix D can be found in Appendix E. During group piano class on the day that the first peer teaching packets were distributed to Group Piano IV tutors, the investigator (who taught all four sections of Group Piano IV) systematically discussed the task analysis and materials for the first peer teaching session with the tutors. Questions from tutors were addressed and a mock peer teaching session was created during class to serve as a model for tutors before their first session.

The investigator assigned each pair a regular meeting day and time accommodating their personal schedules (Appendix F). Each tutor and tutee received a reminder email from the investigator the day before each of the eight peer teaching sessions to confirm their upcoming meeting. Students were provided the name, email, and phone number of their partner so that if they were unable to attend any of their scheduled peer teaching sessions they could contact their partner as well as the investigator via email or phone prior to that session. From there, the investigator contacted the pair to coordinate a time to reschedule. Care was given to avoid multiple sessions during one week and to space each peer teaching session out as evenly as possible over the treatment period.

Instead of participating in peer teaching, students in the control group sight-read independently outside of class in an open piano lab for twenty minutes once a week for eight weeks. This ensured that all participants in the study devoted time to sight-reading outside of class and helped to isolate the effect of peer teaching. The sight-reading materials for students in

the control group were identical to the sight-reading materials used in the peer teaching sessions. Therefore, students in the control group were presented with two duets and two to three solo pieces to sight-read each week just like the students in the experimental group. While students in the control group purposefully did not have a partner with whom to play the duets, they were given either the primo part (students in Group Piano II) or the secondo part (students in Group Piano IV) of each duet to sight-read independently.

Students in the control group reported to the piano lab to practice sight-reading (the same eight weeks of the semester that students in the experimental group were participating in peer teaching sessions to practice sight-reading). A weekly schedule of open lab times was distributed to all students in the control group (Appendix G). Weekly sight-reading materials were available to students upon their arrival to open lab, and a sign-in sheet was placed at the entrance of the lab during open hours. Students signed in and out of independent sight-reading time, and the investigator monitored open lab by overseeing the sign-in sheet, frequently stopping by the piano lab during open hours, and by sending weekly reminder emails to students in the control group about open lab.

As with students in the experimental group, students in the control group had the opportunity to make up sessions by attending open-lab to sight-read materials corresponding to a week(s) they may have missed. In these instances, the investigator notified students of independent sight-reading session absences, and sight-reading materials that corresponded to weeks missed were made available to students upon entrance to the lab. Students had the opportunity to make-up for a maximum of two missed independent sight-reading sessions.

## Pilot Studies for Peer Teaching Sessions

The process used in peer teaching sessions was established based on the results of a series of pilot studies. The investigator conducted the first pilot study with four pairs (a tutor and tutee in each pair) to test the approximate length, task analysis, and materials for the peer teaching sessions. The materials in the original task analysis included two duets and one solo repertoire piece. It took the first pilot pair 45 minutes to complete the original task analysis, resulting in a decision to condense the task analysis prior to the participation of the remaining three pairs. The original task analysis required the tutor and tutee to take turns playing both the primo and secondo part for each of the two duets. The adapted task analysis only called for one performance of each duet with the tutor on the secondo part and the tutee on the primo part. The original task analysis also instructed the pairs to sight-read each piece, both the duets and the solo piece, two times. To further reduce the length of the peer teaching session, the investigator decided that the participants would sight-read each piece within the session only one time.

After viewing the peer teaching session for the first pilot pair, it was determined that there was too much talking time between the tutor and the tutee compared to the amount of time actually spent sight-reading. Therefore, the investigator omitted some of the pre-sight-reading steps in the original task analysis and kept the pre-sight-reading steps that were clearly supported by sight-reading research. These pre-sight-reading steps included determining key and time signatures, tapping the rhythm in both staves, and identifying patterns in the score.

Finally, an additional solo piece for the tutee to sight-read was added to the adapted task analysis. (The original task analysis included only one solo sight-reading piece and two duets.) This was done to increase time spent sight-reading and to balance the amount of time spent sight-reading versus talking. The adapted task analysis instructed the tutor to limit the

discussion/preparation before each solo piece to two minutes, and this was the reason that a stopwatch was made available to tutors during peer teaching sessions.

After these changes were made, three additional pilot pairs completed the sample peer teaching session. It took all three pairs between 24 and 27 minutes to complete the session, a more acceptable amount of time. The investigator noticed that the tutees in the pilot pairs were sight-reading the solo exercises at drastically different tempos. Therefore, metronome markings were added to the solo sight-reading pieces in the adapted task analysis. Moreover, the adapted task analysis indicated that the metronome was to remain on while the tutee sight-read the solo exercises. Not only did this control the tempo among tutees, but it paralleled the instructions found in the sight-reading pretest and posttest.

#### Assessment of Achievement

In order to establish the effect of peer teaching on sight-reading achievement, assessment materials were developed for use in this study. The investigator composed two eight-measure exercises (Appendix H), one for students in Group Piano II and one for students in Group Piano IV, to ensure that all participants sight-read music they had never played before participating in this study. The investigator considered the following criteria regarding the exercise used in the pretest and posttest for participants enrolled in Group Piano II: (1) the left hand consisted of only primary chords in close-position inversions, since close-position cadences in major keys were emphasized during the first year of the group piano sequence; (2) the right hand moved out of a five-finger pattern, a common characteristic of sight-reading exercises in the text for level two students; (3) the piece was in D Major, since the majority of sight-reading exercises in the text have less than four sharps or flats; (4) the piece was eight measures in length, which was the average length of sight-reading exercises found in the text; and (5) scalar and triadic patterns

were included throughout the melody line, since students were taught to recognize and identify patterns before sight-reading. A panel of experts, all group piano instructors with combined group piano teaching experience of 28 years, agreed that the sight-reading material was appropriate for students enrolled in Group Piano II.

The investigator considered the following criteria regarding the exercise used in the pretest and posttest for participants enrolled in Group Piano IV: (1) non-diatonic pitches were included in the melody, since the number of accidentals became more prominent in sight-reading material during the fourth semester; (2) in addition to primary chords, the ii and vi chords were used, since these two chords were commonly included in the sight-reading exercises found in the text during the fourth semester; (3) position shifts occurred in both hands, which paralleled the difficulty of many sight-reading exercises played at this level; (4) the piece modulated from major to minor, since there was a unit regarding modulation during the fourth semester of group piano; (5) scalar and triadic patterns were included in the composition, since students were taught to identify and recognize patterns before sight-reading. Again, a panel of experts approved this sight-reading material as being level-appropriate for students enrolled in Group Piano IV.

#### Pilot Study for Pretest and Posttest Sight-Reading Exercises

After composing the two sight-reading exercises, a pilot study was conducted to examine the sight-reading suitability of the two eight-measure compositions. Fifteen students were asked to participate in piloting the sight-reading exercises composed for the pretest and posttest, and these students were not involved in the present study. The investigator considered eight of these students to have piano proficiency ability similar to students in Group Piano II and seven of these students to have piano proficiency ability similar to students in Group Piano IV.

Changes were made to both eight-measure compositions based on information gleaned from the pilot study. The sight-reading exercise composed for students in Group Piano II originally had an Alberti-Bass pattern throughout the bass staff. Because the majority of the students in the pilot study demonstrated an overwhelming number of continuity difficulties while sight-reading when their hands were moving in contrary motion, the Alberti-Bass pattern was changed to half note block chords. Students then replayed the exercise with block chords. Continuity errors still occurred, but not to the extent that the student would consider the sight-reading exercise to be unplayable.

Additionally, changes were made to the original sight-reading tempos for both sight-reading exercises. The metronome marking quarter note equals 80 beats per minute, a moderate tempo, was originally chosen for both eight-measure exercises. Based on extremely poor student performances and constructive student feedback, it was decided that this tempo was too fast for sight-reading purposes. Therefore, the tempo was altered for both exercises. The exercise composed for students in Group Piano II was changed to quarter note equals 70 beats per minute, and the exercise composed for students in Group Piano IV was changed to quarter note equals 60 beats per minute. After hearing the students in the pilot study replay the compositions at these tempos, it was determined that the slower tempos were more suitable.

#### Dependent Measures and Analysis of Achievement

These two original compositions provided material for pretest and posttest assessment of sight-reading. Participants were videotaped playing the level-appropriate exercise once at the beginning of the semester and once at the end of the semester. Videotaped pretests and posttests were analyzed for pitch, rhythm, and continuity accuracy using an observation form (Appendix I). The scoring process from the Watkins-Farnum Performance Scale for Instrumentalists

(Watkins & Farnum, 1962), a standardized achievement test for all band instruments, was adapted for this study to measure the performance of sight-reading and to provide data for analysis. Because sight-reading pretests and posttests were written on a grand staff, and because pianists simultaneously read many more notes than a musician performing on a monophonic band instrument, alterations were made to the Watkins-Farnum scoring process to collect as much information as possible from a pianist's performance.

In the Watkins-Farnum exam, the measure serves as the scoring unit. For the purposes of analyzing the pretests and posttests in this study, however, the beat served as the scoring unit. It was possible for participants to receive five points per beat, or unit: pitch for right-hand (PR), pitch for left-hand (PL), rhythm for right-hand (RR), rhythm for left hand (RL), and continuity (C). There were four units, or beats, per measure, and these units directly corresponded to the eight measures, or 32 beats, that comprised the pretest and posttest sight-reading exercises.

In order to describe pitch, rhythm, and continuity error within a unit, working definitions were established for these three criteria. Pitch errors were defined as any note that was added or omitted, or if an incorrect note was played. Rhythm errors were defined as holding through a rest, holding rather than playing repeated notes, not holding a note for its full value, holding a note longer than its full value (up to 3/4 beat longer; any longer than one beat over the value was considered a continuity error), and any note value omitted, or not played at all. Each scoring unit could receive only one PR error, one PL error, one RR error, and one RL error. Therefore, pitch and rhythm errors were counted according to whether they occurred within a unit rather than by total frequency, as it was possible to commit more than one pitch and rhythm error in each hand per beat.



Continuity errors occurred in several ways. If a pause or hesitation occurred at the bar line, a continuity error was marked for the first beat, or unit, of the following measure, as that measure began with hesitation. If a hesitation of more than 3/4 beat occurred at any point in the performance, a continuity error was marked for the beat that was delayed due to the hesitation, as that beat did not begin in time. If a student moved backwards to replay any portion of the exercise, only the first performance was scored. Additionally, a continuity error was counted for the beat that did not occur at the correct time because the student moved backwards instead of forwards. If a student went backwards in the score to re-play any portion of the exercise more than one time (i.e. measures 1-2 followed by measures 1-2 followed again by measures 1-2) then a total of “2” continuity errors were counted for the beat (the downbeat of measure 3) that did not begin in time. It was possible for this type of scoring to result in more beat continuity errors than the total number of beats in the exercise, however in reality this was considered to be a highly unlikely scenario (Hanberry, 2004).

Participants received a pretest and posttest achievement score ranging from 0-160 (32 units x 5 possible errors per unit). Reliability with an independent observer was calculated on 15% of the pretest and posttest sight-reading exercises. The two observers achieved an interobserver reliability score of  $R = .96$  for the pretests and  $R = .97$  for the posttests. Reliability scores were obtained by dividing the total number of agreements by the sum of agreements plus disagreements.

#### Assessment of Attitude

All participants completed the same attitudinal questionnaire (Appendix J) for the pretest regardless of their level in group piano. The questionnaire was comprised of eleven items, and participants responded to all items by circling a number on a seven point Likert Scale. The first

two questionnaire items collected information about students' perception of their sight-reading ability. The first item asked students to rate their sight-reading ability from "1" (excellent) to "7" (poor), while the second item asked students to compare their sight-reading ability to other students in their group piano level from "1" (above average) to "7" (below average).

Questionnaire items three, four, and five pertained to the degree with which students valued the skill of sight-reading. Item three asked students to rate the importance of sight-reading at the keyboard from "1" (very important) to "7" (not at all important), item four asked students to rate how worthwhile they considered improving their keyboard sight-reading skills from "1" (very worthwhile) to "7" (not at all worthwhile), and item five asked students to rate how beneficial they believed sight-reading at the keyboard would be to their future career from "1" (very beneficial) to "7" (not at all beneficial).

Questionnaire items six, seven, and eight collected information regarding students' ability to sight-read with continuity. Item six asked students to rate how capable they felt in maintaining continuity even when pitch and rhythm errors occurred from "1" (very capable) to "7" (not very capable). Item seven asked students to rate how often they hesitated at the bar lines when sight-reading from "1" (always) to "7" (never), and item eight asked students to rate how often they were able to move forward in the tempo of a piece even if they had to drop out a hand for a few measures from "1" (always) to "7" (never). Questionnaire items nine, ten, and eleven addressed the frequency with which students believed they employed certain pre-sight-reading behaviors. Item nine asked students to rate how often they determined the key and time signature before they sight-read from "1" (always) to "7" (never), item ten asked students to rate how often they identified patterns in the score before sight-reading from "1" (always) to "7" (never), and item

eleven asked students to rate how often they tapped the rhythm before sight-reading at the keyboard from “1” (always) to “7” (never).

All participants completed the same attitudinal questionnaire for the posttest. Students in the experimental group, however, also completed an addendum to the attitudinal questionnaire specific to the peer teaching experience. Peer tutees and peer tutors completed different addendums, and addendums were comprised of Likert Scale questions and open-ended questions. Likert Scale questions collected information regarding students’ opinions of the peer teaching sessions, how well students worked with their peer partner, whether or not students felt peer teaching sessions affected their personal sight-reading process, whether or not students felt peer teaching sessions improved their sight-reading abilities, and students’ perceptions of their peer teaching partner’s attitude toward the experience. Open-ended questions collected information about what students considered the most valuable as well as the most difficult or frustrating part of the peer teaching experience. Additionally, students were asked to offer suggestions that might enhance the peer teaching process. The addendum for peer tutees can be found in Appendix K, and the addendum for peer tutors can be found in Appendix L.

#### Dependent Measures and Analysis of Attitude

The questionnaire (Appendix J) provided material for pretest and posttest assessment of attitude toward sight-reading at the piano. Participants completed the questionnaire once at the beginning of the semester and once at the end of the semester. Participants’ responses provided data for statistical comparisons. Likert Scale responses were averaged for each of the eleven questionnaire items within treatment groups for both levels of group piano and then compared across pretests and posttests. Additional attitudinal information gathered via posttest questionnaire addendums provided descriptive feedback specific to the peer teaching experience.

## Analysis of Time Usage

All peer teaching sessions were videotaped to keep an ongoing analysis of what was taking place week to week during sessions. Furthermore, it allowed the investigator a way to monitor students' attendance, sight-reading, and progress across the eight peer teaching sessions. Each peer teaching session (a total of 184 sessions, 23 peer dyads x 8 weeks) was recorded with a DVD camcorder for further descriptive analysis. Session length and behavior categorization during sessions were documented and categorized via the computerized observation program SCRIBE©: Simple Computer Recording Interface for Behavioral Evaluation (Duke & Stammen, 2006-2007). Data collected provided the number of minutes/seconds spent in each category. Behavior categories for peer teaching sessions included: (1) Piano Playing, (2) Peer Teaching, and (3) Other. For the purposes of this study, working definitions were created for these three categories. "Piano Playing" was defined as any time the tutor or tutee played the piano during the session. This included solo sight-reading, duet sight-reading, or any other point in the peer teaching session that sound was produced from the keyboard as long as it was relative to the sight-reading task analysis. "Peer Teaching" was defined as any communication between tutor and tutee relevant to the sight-reading task analysis. "Other" was defined as any behavior or discussion irrelevant to sight-reading. This included setting up materials, talking about subject matter other than sight-reading, staring at the score, silence, or performing music on the piano that was not included in the sight-reading materials for that week.

SCRIBE© was also used for descriptive analysis of the two minutes of mental preparation that participants received prior to sight-reading the pretest and posttest exercises. Behavior categories for time usage during mental preparation included: (1) metronome use, (2) writing on the score, (3) finger shadowing, (4) tapping, (5) singing, and (6) other miscellaneous

behavior. Working definitions were created for these six categories. “Metronome use” referred to any point during the two minutes that the metronome was turned on. “Writing on the score” was defined as any time the tip of a participant’s pencil made contact with paper. “Finger shadowing” was documented whenever a participant moved his or her fingers as if they were playing on a piano. Finger shadowing could occur on the fall board, in the air, in a student’s lap, and so forth, as long as finger movement resembled that of piano playing. “Tapping” was defined as any time a participant tapped (with hands or feet) regardless of whether or not it happened with one or both hands. “Singing” was defined as any method that a participant used to produce a melody, whether that be through singing, humming, or whistling. “Other Miscellaneous Behavior” referred to any point that none of the other categories were taking place or when the participant was simply staring at the score. Depending on the way each participant chose to spend the two minutes of preparation, SCRIBE© analysis may or may not have been possible in one viewing. When participants executed more than one of the above behaviors simultaneously (i.e. it is possible to tap and sing at the same time, or use the metronome and finger shadow at the same time), the investigator chose one of the behaviors to observe and document via SCRIBE© for the first viewing, and then viewed the two-minute segment a second time to observe and document the other behavior. Again, this was only necessary when participants simultaneously executed more than one of the behavior categories. All video was viewed and categorized, and SCRIBE© calculated percentage of time spent in each activity.

### Procedure

A pretest-treatment-posttest design was utilized in this study. The pretest was administered during the first two weeks of class and consisted of two parts: a videotaped sight-reading performance of an eight-measure exercise and an attitudinal questionnaire. All

participants signed up for a time to meet individually with the investigator to take the pretest. All pretest meetings took place in the same room, and the room was equipped with an acoustic piano, a DVD camcorder, pencils, and a metronome.

All participants experienced the same sequence of events during the pretest and posttest (Appendix M). The investigator read aloud the instructions (Appendix N) to each participant at the beginning of the pretest to ensure directions were clear. At this point, the investigator turned on the video camera and left the room. Each student then had two minutes to mentally prepare for sight-reading. During this time of mental preparation, the piano lid remained closed and students were not permitted to play the piano. However, students were permitted to tap, write on the score, use the metronome, count aloud, or employ any other type of pre-sight-reading strategy they considered beneficial. When two minutes had passed, the investigator re-entered the room and notified the participant. Then, the investigator turned the metronome on at the designated tempo (quarter note equals 70 beats per minute for students in Group Piano II, and quarter note equals 60 beats per minute for students in Group Piano IV) and left the room again. While the metronome was on, each participant sight-read the piece one time. The camera was turned off when the participant finished playing. Immediately following the sight-reading performance, the student completed the attitudinal questionnaire.

The experimental group, comprised of peer teaching pairs, participated in eight peer teaching sessions across the semester. Table 1 displays a weekly calendar of events for students in the experimental group. All peer teaching sessions occurred in the same room and were videotaped; the room was equipped with an acoustic piano, a metronome, a stopwatch, a DVD camcorder, pencils, and a binder containing sight-reading materials for the corresponding week. While the length of the peer teaching sessions were not restricted to an exact amount of time,

Table 1

Weekly Calendar of Events for Students in the Experimental Group

| Week | Dates            | Schedule                           |
|------|------------------|------------------------------------|
| 1    | January 14-18    | Pretests                           |
| 2    | January 21-25    | Pretests                           |
| 3    | January 28-31    | Peer Pairs and Schedules Announced |
| 4    | February 4-8     | Mardi Gras Break                   |
| 5    | February 11-15   | Peer Teaching Session #1           |
| 6    | February 18-22   | Peer Teaching Session #2           |
| 7    | February 25-29   | Peer Teaching Session #3           |
| 8    | March 3-7        | Peer Teaching Session #4           |
| 9    | March 10-14      | Peer Teaching Session #5           |
| 10   | March 17-21      | Spring Break                       |
| 11   | March 24-28      | Peer Teaching Session #6           |
| 12   | March 31-April 4 | Catch-Up week                      |
| 13   | April 7-11       | Peer Teaching Session #7           |
| 14   | April 14-18      | Peer Teaching Session #8           |
| 15   | April 21-15      | Posttests                          |
| 16   | April 29-May 1   | Posttests                          |
| 17   | May 5-9          | Finals Week                        |

each pair had the peer teaching room reserved weekly for thirty minutes. Peer pairs were informed that peer teaching sessions should last as long as it took to get through the task analysis

and sight-reading materials for that week. Participants in the control group participated in eight independent sight-reading sessions across the semester. These eight independent sight-reading sessions occurred in the piano lab during the same weeks of the semester as the eight peer teaching sessions displayed in Table 1.

All participants sight-read the same eight-measure exercise for the posttest that they sight-read for the pretest; the sequence of events was identical to the pretest. It could be argued that the posttest was not truly sight-reading because participants already sight-read the posttest exercise during the pretest. Despite this fact, it was decided that the sight-reading exercise used for the pretest would also be used for the posttest. It was believed that students would not retain mental or physical memory from playing the pretest by the time they completed the posttest. To determine whether this belief was accurate, participants were asked if they had ever played the eight-measure piece immediately after they sight-read the exercise for the pretest and again after they sight-read the exercise for the posttest. Responses were documented. Upon the completion of the performance aspect of the posttest, participants completed the same attitudinal questionnaire as on the pretest. Participants in the experimental group also completed an addendum to the questionnaire specific to the peer teaching experience (Appendix K and Appendix L).

Peer teaching (for the experimental group) and independent sight-reading in the lab (for the control group) were included in the syllabi for students in Group Piano II and Group Piano IV. Peer teaching sessions and independent sight-reading in the lab comprised 15% of students' overall semester grade in Group Piano II and 25% of students' overall semester grade for Group Piano IV. The weight distribution for exams, quizzes, sight-reading, and other activities are listed in Table 2.



Table 2

Distribution of Percentage Points in Group Piano II and Group Piano IV

| Course         | Sections   | Distribution of Grades   | Percentage |
|----------------|------------|--------------------------|------------|
| Group Piano II | 1, 2, 3, 4 | Exam 1                   | 20         |
|                | 1, 2, 3, 4 | Exam 2                   | 20         |
|                | 1, 2, 3, 4 | Quizzes                  | 10         |
|                | 1, 2, 3, 4 | Final Exam               | 35         |
|                | 1 & 2      | 8 Peer Teaching Sessions | 15         |
|                | 3 & 4      | 8 Lab Sessions           | 15         |
| Group Piano IV | 1, 2, 3, 4 | Exam 1                   | 15         |
|                | 1, 2, 3, 4 | Exam 2                   | 15         |
|                | 1, 2, 3, 4 | Quizzes                  | 15         |
|                | 1, 2, 3, 4 | Proficiency Exam         | 30         |
|                | 1 & 2      | 8 Lab Sessions           | 25         |
|                | 3 & 4      | 8 Peer teaching Sessions | 25         |

All students, regardless of whether or not they were in the control or the experimental group, received similar sight-reading instruction during regularly scheduled classes. The same level-appropriate sight-reading materials were utilized in all sections and were from the textbook used in class. Therefore, students sight-read the same materials during class for the entire semester. Because three different instructors taught the four sections of Group Piano II, written sight-reading instructions were distributed to all group piano instructors so that sight-reading

during regularly scheduled class time was as similar as possible across sections. Refer to Appendix O for an example of sight-reading instructions distributed to all group piano instructors for each scheduled class.

Data collected from video analysis of pretest and posttest sight-reading exercises and responses to the attitudinal surveys were used for statistical analyses. Null hypotheses for statistical tests were (All tests were two-tailed and the probability level was set to  $\alpha = .05$ ):

1. There would be no difference in pretest and posttest sight-reading scores among participants in Group Piano II.
2. There would be no difference in pretest and posttest sight-reading scores among participants in Group Piano IV.
3. There would be no difference in scores among participants in Group Piano II due to peer teaching treatment.
4. There would be no difference in scores between Group Piano IV students due to peer teaching treatment.
5. There would be no difference in pretest and posttest Likert Scale responses for each of the eleven questionnaire items between Group Piano II students due to peer teaching treatment.
6. There would be no difference in pretest and posttest Likert Scale responses for each of the eleven questionnaire items among Group Piano IV students due to peer teaching treatment.

## CHAPTER 3

### RESULTS

The purposes of this study were to examine the effects of peer teaching on student achievement and student attitude toward sight-reading at the piano. Participants ( $N = 85$ ) were undergraduate music majors enrolled in Group Piano II ( $n = 39$ ) and Group Piano IV ( $n = 46$ ) during the spring of 2008 at Louisiana State University. All participants completed a pretest that consisted of two parts: a videotaped sight-reading performance of an eight-measure piano piece, and an 11-item questionnaire. Subsequently, participants were in either one of two groups based on the section of group piano they chose when registering: an experimental group or a control group. Participants in both groups attended regularly scheduled group piano classes, but participants in the experimental group were involved in weekly peer teaching sight-reading sessions (Group Piano II students in this group were tutees while Group Piano IV students in this group were tutors) outside of class for eight weeks. Participants in the control group also met outside of class once a week for eight weeks. These students sight-read independently and were not involved in peer teaching. Finally, participants took a posttest. The posttest was identical to the pretest except that students involved in the experimental group completed an addendum to the 11-item questionnaire that was specific to the peer teaching experience. Pretest and posttests were analyzed and compared across groups to determine whether or not peer teaching affected student achievement and attitude toward sight-reading.

#### Achievement

Sight-reading achievement was measured by analyzing videotaped student performances of an eight-measure piano piece. Performances were viewed and scored based on pitch accuracy, rhythmic accuracy, and continuity. Both sight-reading pieces were comprised of 32 beats, and

each beat was worth five points. Beats were broken down into five components: pitch in the right hand (PR), pitch in the left hand (PL), rhythm in the right hand (RR), rhythm in the left hand (RL), and continuity (C). Each component was worth one point per beat. With 32 beats at five points per beat, the highest possible score for both sight-reading pieces was 160 points.

Therefore, each participant in the study had a pretest sight-reading achievement score and a posttest sight-reading achievement score. These scores were compared across control and experimental groups in Group Piano II and in Group Piano IV to determine the effects of peer teaching on student achievement in sight-reading. Participants in Group Piano II sight-read a different eight-measure piece than participants in Group Piano IV (Appendix H) to account for difference in ability level. Therefore, separate statistical analyses were completed on the data.

A Two-Way ANOVA with repeated measures was used to calculate differences between control and experimental groups across pretest and posttest scores in Group Piano II. Results of this analysis are presented in Table 3. A significant difference due to the main effect of treatment groups was found [ $F(1, 37) = 7.92, p < .01$ ], with scores in the experimental group ( $M = 131.74, SD = 3.04$ ) being significantly higher than scores in the control group ( $M = 118.38, SD = 3.65$ ). A significant difference due to the main effect of the test was also found [ $F(1, 37) = 38.25, p < .001$ ], with posttest scores ( $M = 135, SD = 15.43$ ) higher than pretest scores ( $M = 117.51, SD = 20.24$ ). There was not a significant interaction between tests (pretests and posttests) and treatment groups (experimental and control) [ $F(1, 37) = .07, p > .05$ ]. Therefore, participants in Group Piano II significantly improved from the pretest to the posttest, but this improvement did not differ significantly across control and experimental groups.

Table 3

Two-Way ANOVA with Repeated Measures for Group Piano II

| Source            | DF | Sum of Squares | Mean Square | F-Value | P-Value |
|-------------------|----|----------------|-------------|---------|---------|
| Treatment Group   | 1  | 3370.50        | 3370.50     | 7.92    | < .01   |
| Error             | 37 | 15742.37       | 425.47      |         |         |
| Tests             | 1  | 5684.75        | 5684.75     | 38.25   | < .001  |
| Tests x Treatment | 1  | 10.09          | 10.09       | .07     | .80     |
| Error             | 37 | 5498.79        | 148.62      |         |         |

A Two-Way ANOVA with repeated measures was also used to calculate differences between control and experimental groups across pretests and posttests in Group Piano IV. Results of this analysis are presented in Table 4. There was not a significant difference due to the main effect of treatment groups [ $F(1, 44) = 2.32, p > .05$ ]. While scores in the experimental group ( $M = 112.70, SD = 4.47$ ) were higher than scores in the control group ( $M = 103.07, SD = 4.47$ ) the difference was not enough to be considered significant. A significant difference between tests, however, was found [ $F(1, 44) = 50.86, p < .001$ ] with posttest scores ( $M = 113.76, SD = 22.85$ ) being higher than pretest scores ( $M = 102, SD = 22.35$ ). Additionally, the interaction between treatment groups across pretests and posttests was also found to be significant [ $F(1, 44) = 9.93, p < .001$ ]. The degree of change from pretests ( $M = 104.22, SD = 4.69$ ) to posttests ( $M = 121.17, SD = 4.55$ ) from participants in the experimental group was nearly 17 points while the difference was less than 7 points from participants in the control group (pretests:  $M = 99.78, SD = 4.69$ ; posttests:  $M = 106.35, SD = 4.55$ ). Figure 1 displays the interaction between treatment

groups across pretests and posttests; it is clear the experimental group improved more than the control group.

Table 4

Two-Way ANOVA with Repeated Measures for Group Piano IV

| Source          | DF | Sum of Squares | Mean Square | F-Value | P-Value |
|-----------------|----|----------------|-------------|---------|---------|
| Treatment Group | 1  | 2133.14        | 2133.41     | 2.32    | .14     |
| Error           | 44 | 40450.04       | 919.32      |         |         |
| Tests           | 1  | 3181.32        | 3181.32     | 50.86   | < .001  |
| Tests x groups  | 1  | 620.88         | 620.88      | 9.93    | < .001  |
| Error           | 44 | 2752.304       | 62.552      |         |         |

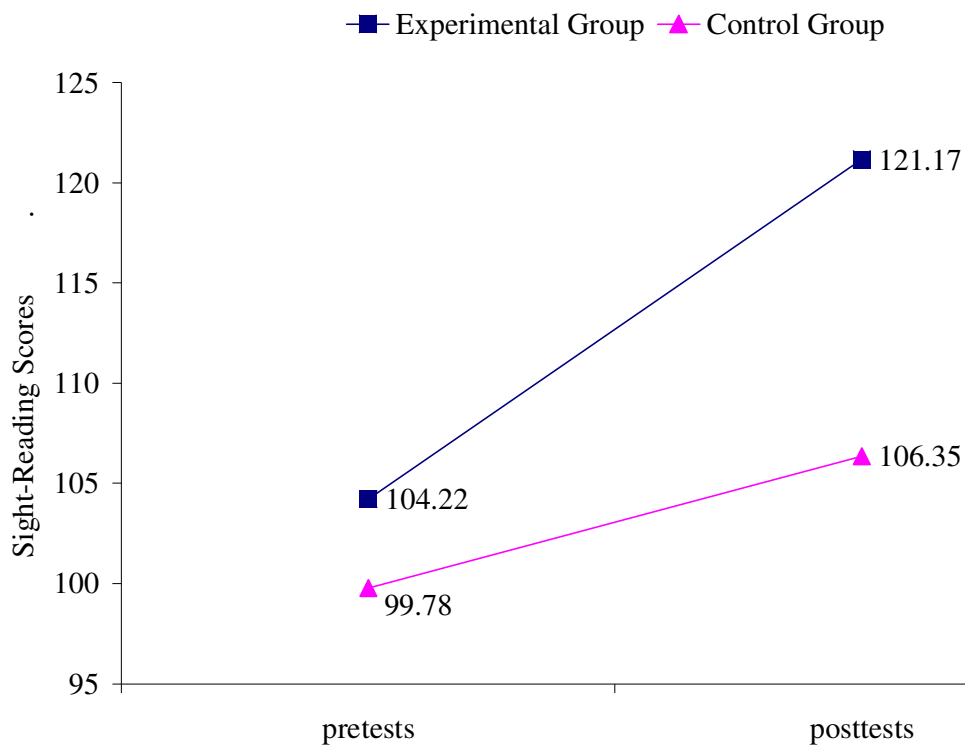


Figure 1. Achievement Scores for Treatment Groups Across Test Interaction for Group Piano IV

Because of the procedure used to score sight-reading achievement, data were available regarding the breakdown of overall sight-reading pretest and posttest scores. It is important to remember that peer teaching treatment was not specifically directed toward the isolated improvement of one or more of these five components (PR, RR, PL, RL, C), but rather toward the improvement of sight-reading ability as a whole. Numerical values representing each of the five components comprising overall pretest and posttest scores are displayed in Figures 2-11 and are addressed as follows.

The maximum score possible for each of the five components was 32 points. It is clear when comparing all ten figures that overall (between tests and among groups), participants scored highest in continuity (Figures 10 and 11) and lowest in left hand pitch accuracy (Figures 6 and 7). Scores were high and varied little regarding continuity, ranging from 26.8 to 30.7. Scores were low and varied a great deal regarding left hand pitch accuracy, ranging from 9.2 to 25.5. Participants scored higher in rhythmic components than pitch accuracy – in both hands – and scores for right hand rhythmic accuracy and right hand pitch accuracy were higher than scores for left hand rhythmic accuracy and left hand pitch accuracy.

The mean of control and experimental group pretest scores for Group Piano II indicated the following ranking of components from lowest to highest: left hand pitch accuracy ( $M = 16.5$ ), right hand pitch accuracy ( $M = 20.7$ ), left hand rhythmic accuracy ( $M = 22.2$ ), right hand rhythmic accuracy ( $M = 28.3$ ), and continuity ( $M = 28.9$ ). When averaging control and experimental group posttest scores for Group Piano II, components almost maintained their order in rank from lowest to highest aside from a reverse order between right hand rhythmic accuracy and continuity (which switched places in rank due to a mere tenth of a point). As expected,

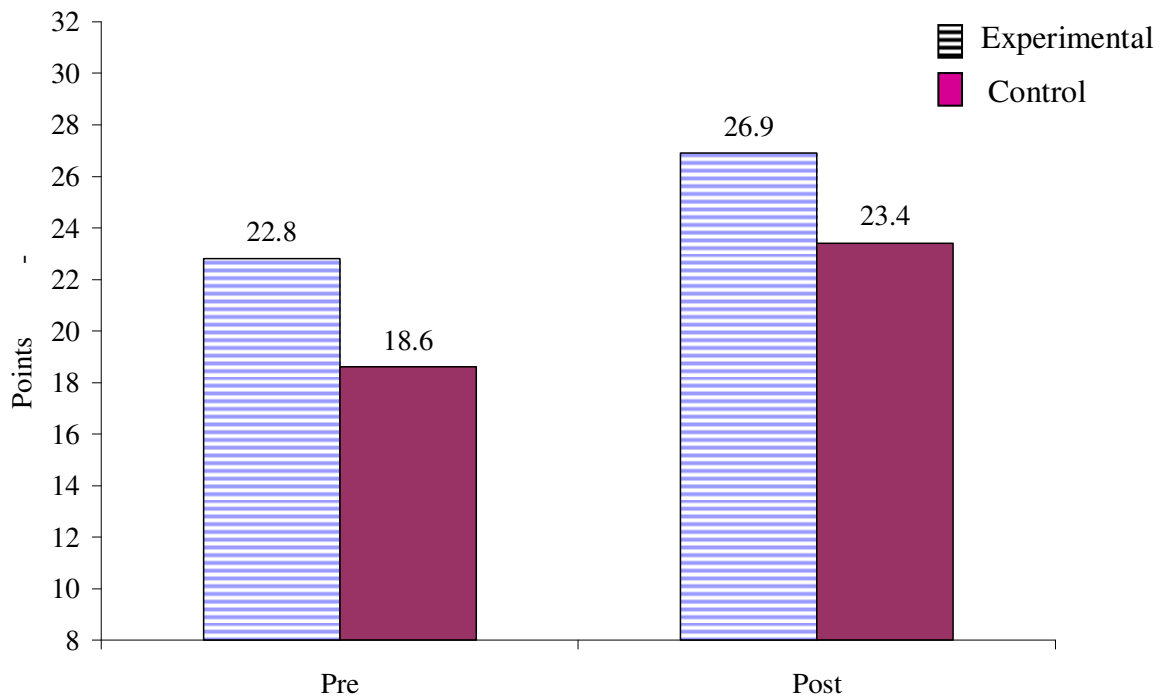


Figure 2. Pretest vs. Posttest: Right Hand Pitch Accuracy, Group Piano II

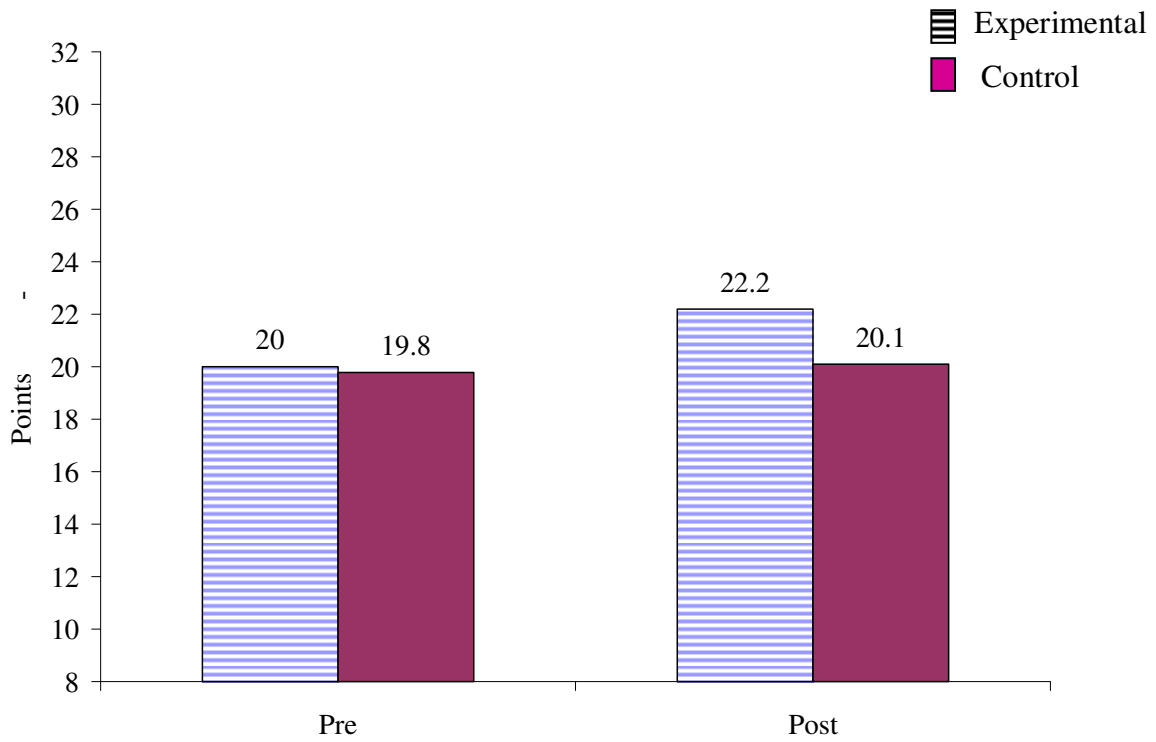


Figure 3. Pretest vs. Posttest: Right Hand Pitch Accuracy, Group Piano IV



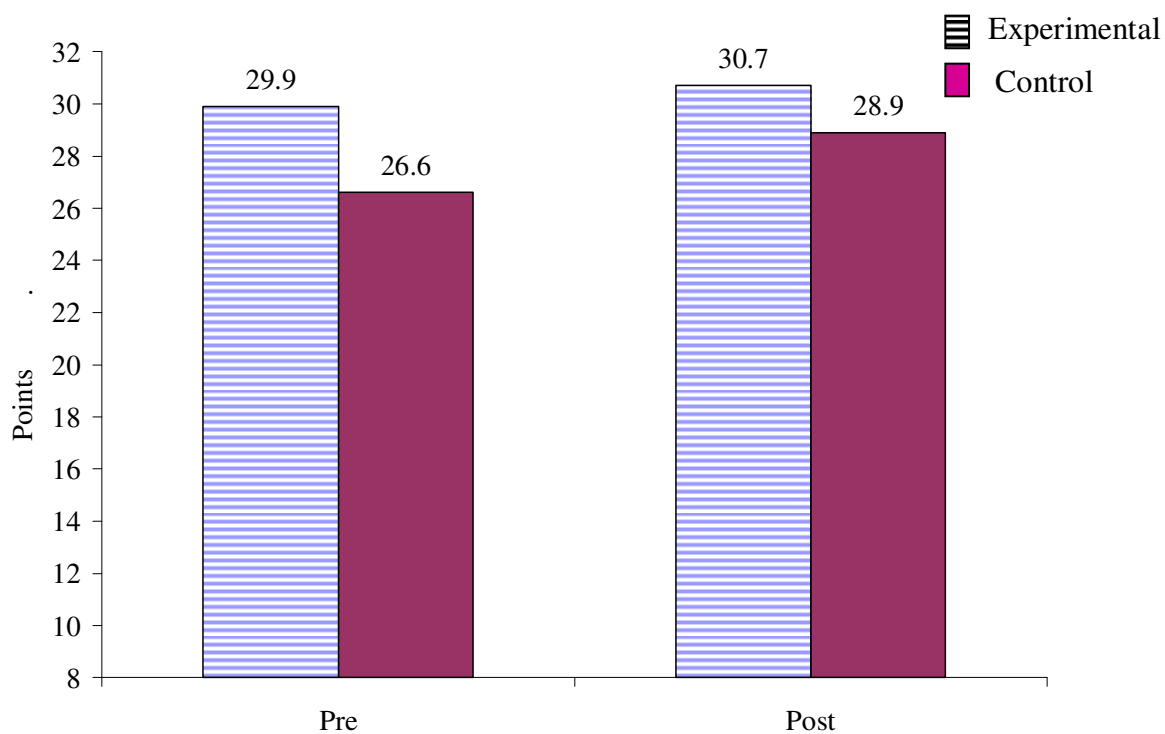


Figure 4. Pretest vs. Posttest: Right Hand Rhythmic Accuracy, Group Piano II

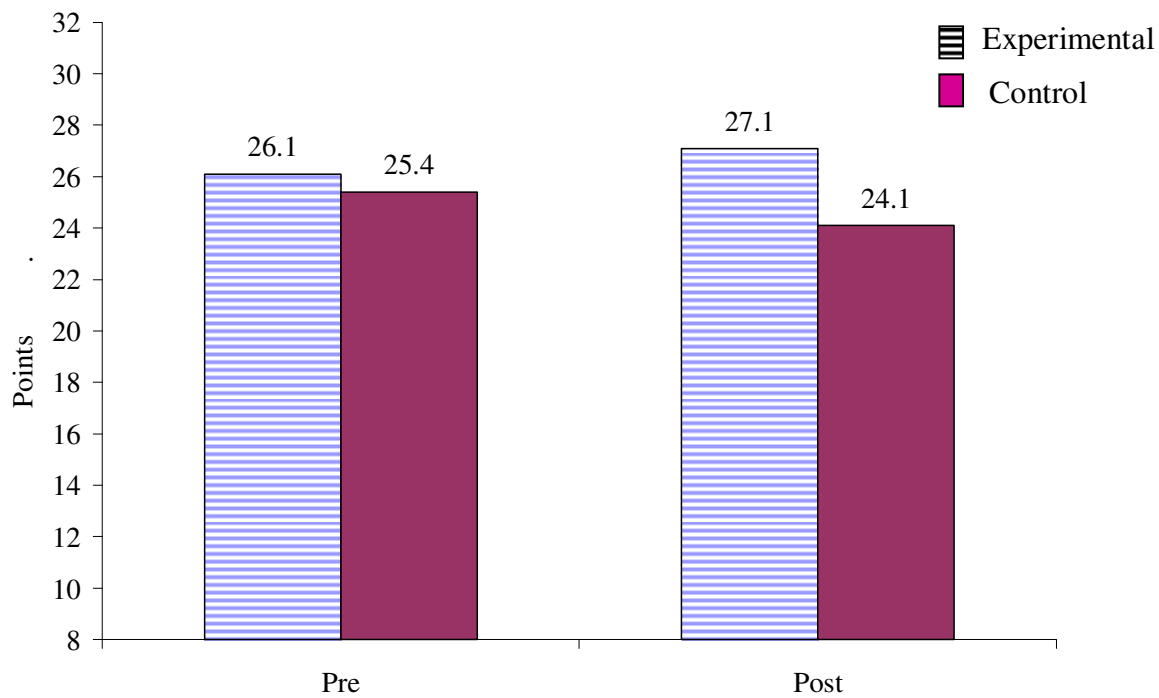


Figure 5. Pretest vs. Posttest: Right Hand Rhythmic Accuracy, Group Piano IV

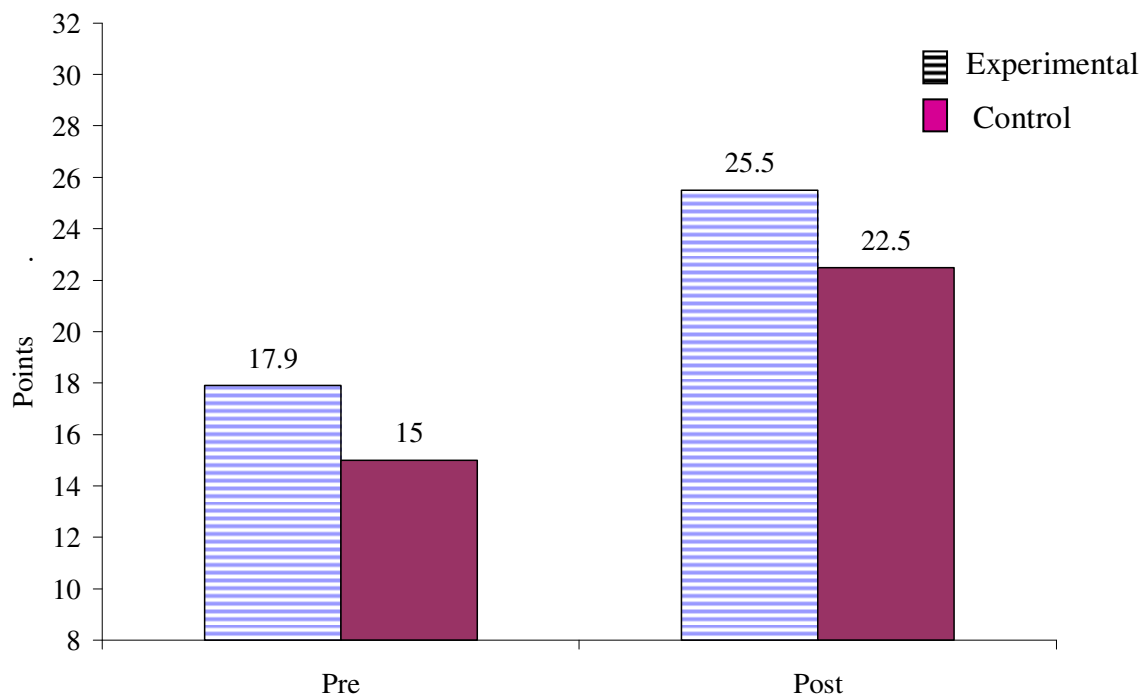


Figure 6. Pretest vs. Posttest: Left Hand Pitch Accuracy, Group Piano II

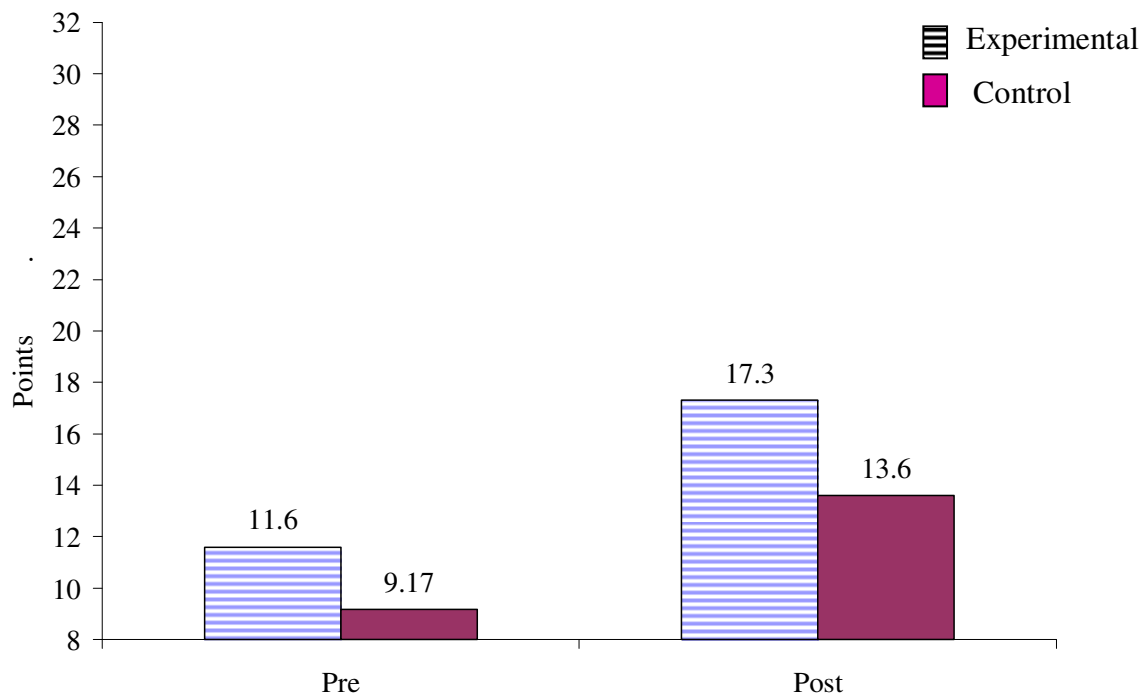


Figure 7. Pretest vs. Posttest: Left Hand Pitch Accuracy, Group Piano IV

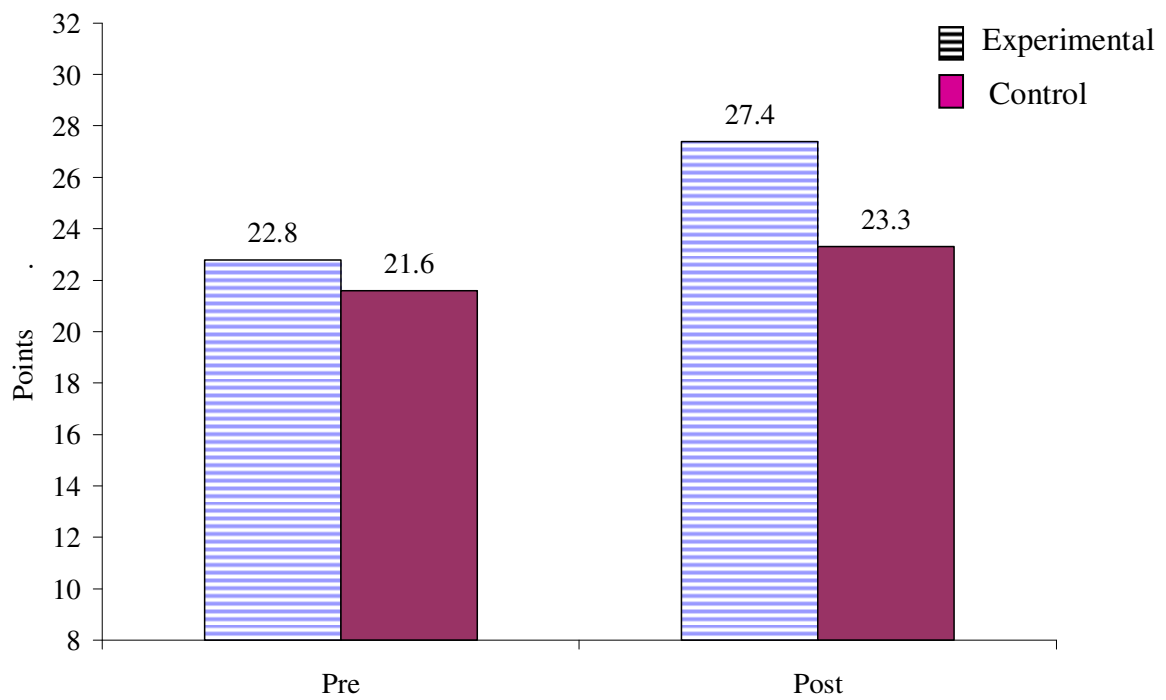


Figure 8. Pretest vs. Posttest: Left Hand Rhythmic Accuracy, Group Piano II

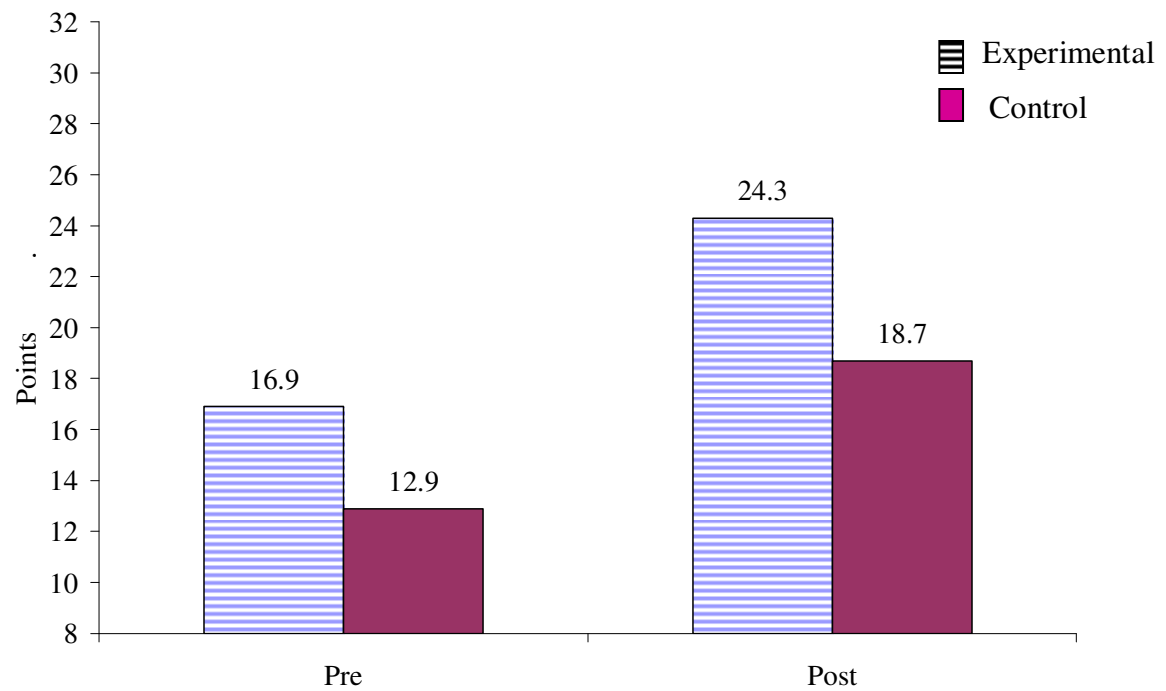


Figure 9. Pretest vs. Posttest: Left Hand Rhythmic Accuracy, Group Piano IV

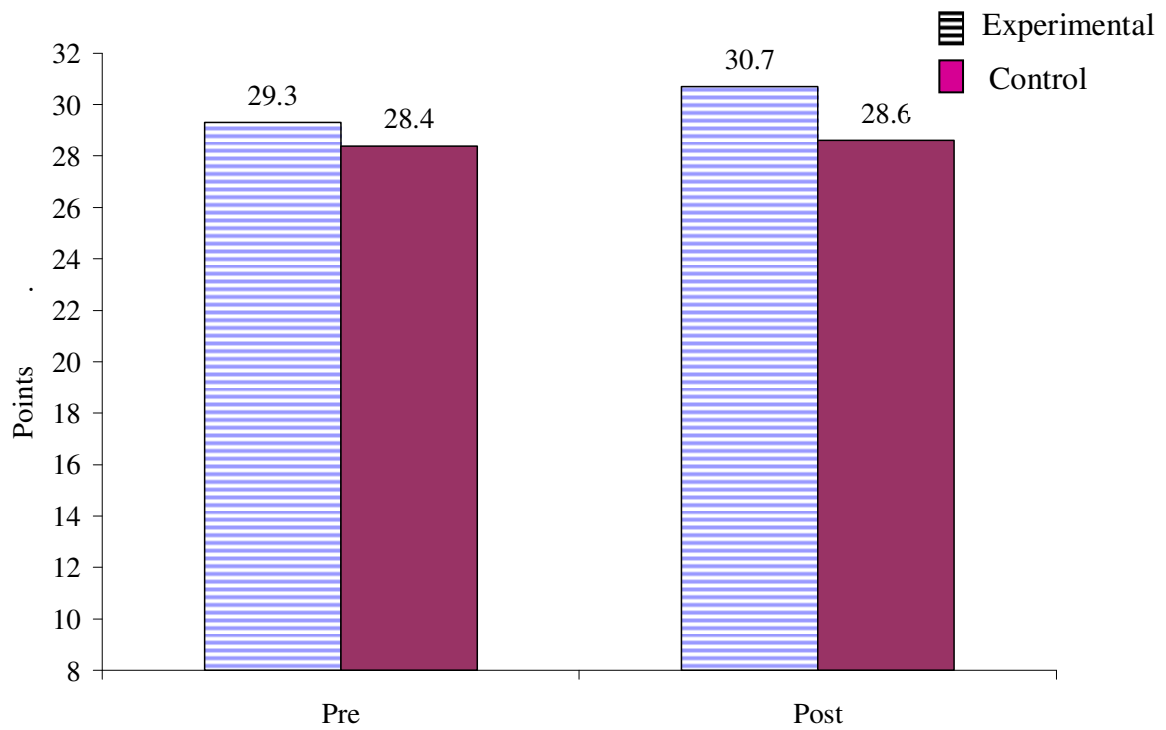


Figure 10. Pretest vs. Posttest: Ability to Maintain Continuity, Group Piano II

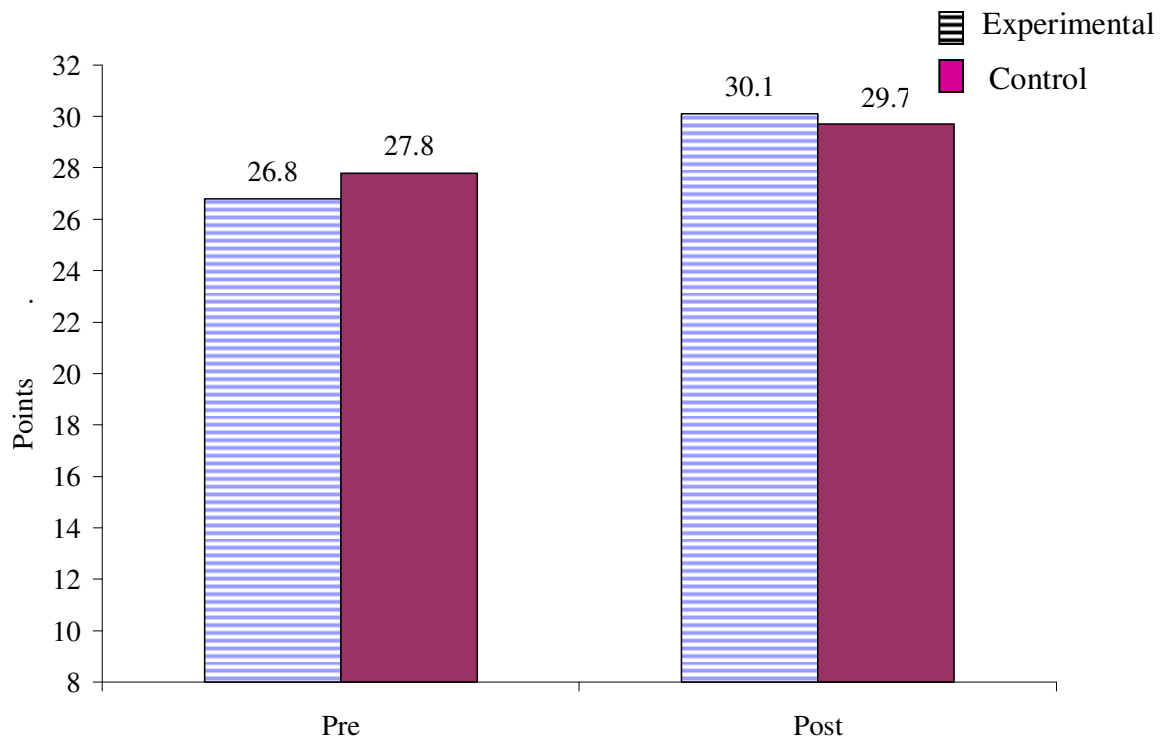


Figure 11. Pretest vs. Posttest: Ability to Maintain Continuity, Group Piano IV

means for all components were higher on the posttest than the pretest: left hand pitch accuracy ( $M = 24$ ), right hand pitch accuracy ( $M = 25.2$ ), left hand rhythmic accuracy ( $M = 25.4$ ), continuity ( $M = 29.7$ ), and right hand rhythmic accuracy ( $M = 29.8$ ). Differences in pretest and posttest scores indicated that left hand rhythmic and pitch accuracy made higher gains than right hand rhythmic and pitch accuracy. Achievement in continuity barely varied across pretest and posttest.

When control and experimental group pretest scores for Group Piano IV were averaged, scores indicated the following ranking of components from lowest to highest: left hand pitch accuracy ( $M = 10.4$ ), left hand rhythmic accuracy ( $M = 14.9$ ), right hand pitch accuracy ( $M = 19.9$ ), right hand rhythmic accuracy ( $M = 25.8$ ), and continuity ( $M = 27.3$ ). When control and experimental group posttest scores for Group Piano IV were averaged, components nearly maintained their order in rank from lowest to highest aside from a reverse order between right hand pitch accuracy and left hand rhythmic accuracy (which switched places in rank due to only three tenths of a point). Similar to Group Piano II, means for all components were higher on the posttest than the pretest. Group Piano IV posttest rankings of the five components from lowest to highest were: left hand pitch accuracy ( $M = 15.5$ ), right hand pitch accuracy ( $M = 21.2$ ), left hand rhythmic accuracy ( $M = 21.5$ ), right hand rhythmic accuracy ( $M = 25.6$ ), and continuity ( $M = 29.9$ ). As in Group Piano II, differences in Group Piano IV pretest and posttest scores indicated that left hand rhythmic and pitch accuracy made higher gains than right hand rhythmic and pitch accuracy. Additionally, achievement in continuity varied little across pretest and posttest. Group Piano II students scored higher numerical values than Group Piano IV students across pretests and posttests for all components except for continuity, which remained similar across levels II

and IV. Group Piano II students did, however, have an easier sight-reading excerpt than Group Piano IV students.

Recall that once participants were handed the music to the eight-measure sight-reading exercise during the pretest and posttest, they then had two minutes with the piano lid closed in which to view the score and mentally prepare to play the music on the piano. During these two minutes, participants prepared in a variety of ways. Preparatory behavior was documented via SCRIBE© and is displayed in Figures 12-17.

The following six SCRIBE© categories were created to document student behavior during the two minutes of mental preparation prior to sight-reading: metronome use (M), writing on the score (W), finger shadowing (FS), tapping (T), singing (S), and other miscellaneous behavior (O), which referred to any point that none of the other categories were taking place or when the participant was simply staring at the score. It is important to remember that participants often executed more than one category simultaneously (i.e. using the metronome while tapping, or singing while finger shadowing). Therefore, the sum of students' percentage of time usage among categories could exceed 100%.

As is evident from Figures 12-17, participants spent the largest percentage of the two minute preparatory time engaged in finger shadowing (Figure 14) and the least amount of time engaged in singing (Figure 16). Percentages of the two minutes spent using the metronome (29.7%, average percentage across levels and groups) and time spent writing (29%, average percentage across levels and groups) were nearly equal and followed as an “almost” tie for second place behind percentage of time spent finger shadowing (50.9%, average percentage

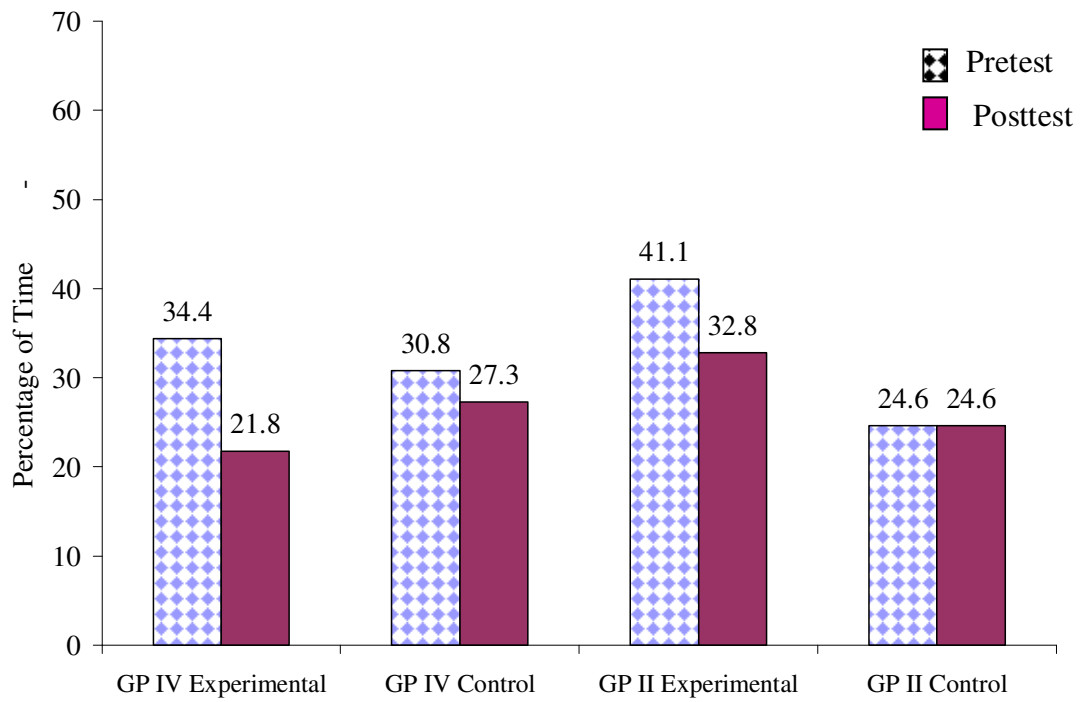


Figure 12. Sight-Reading Preparation: Metronome

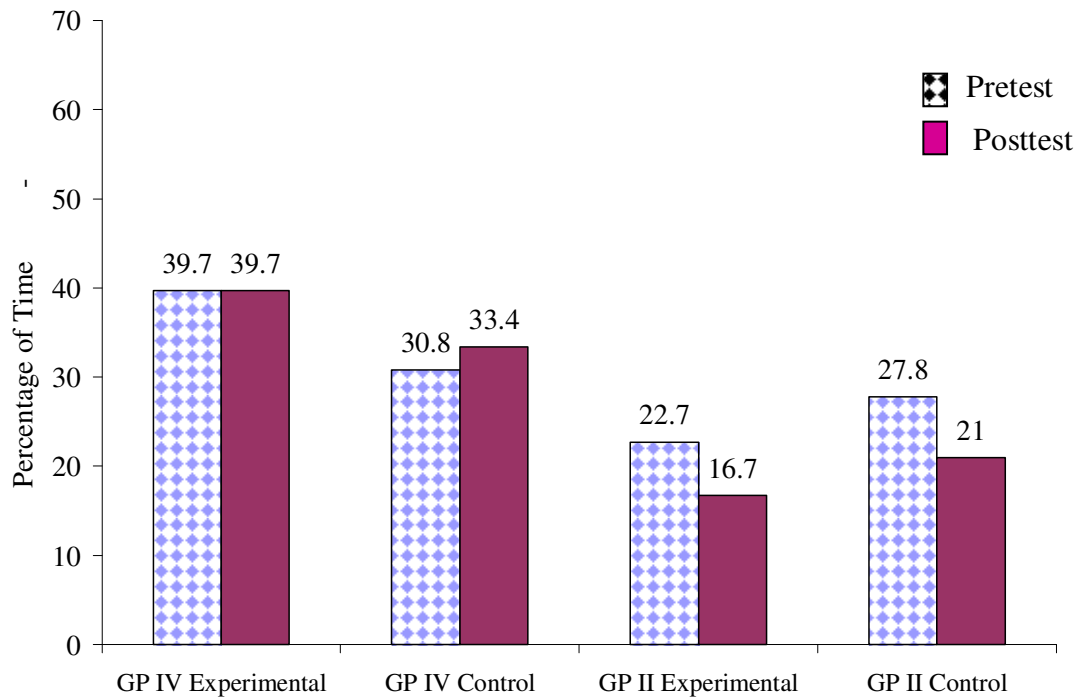


Figure 13. Sight-Reading Preparation: Writing

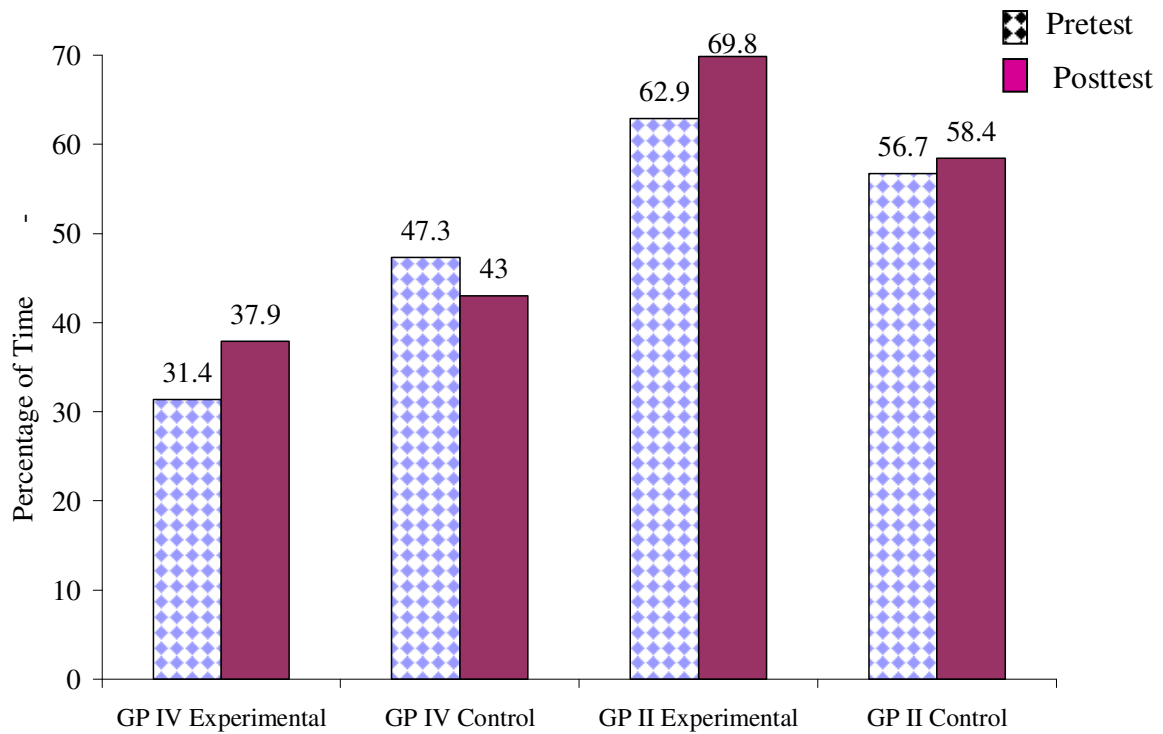


Figure 14. Sight-Reading Preparation: Finger Shadowing

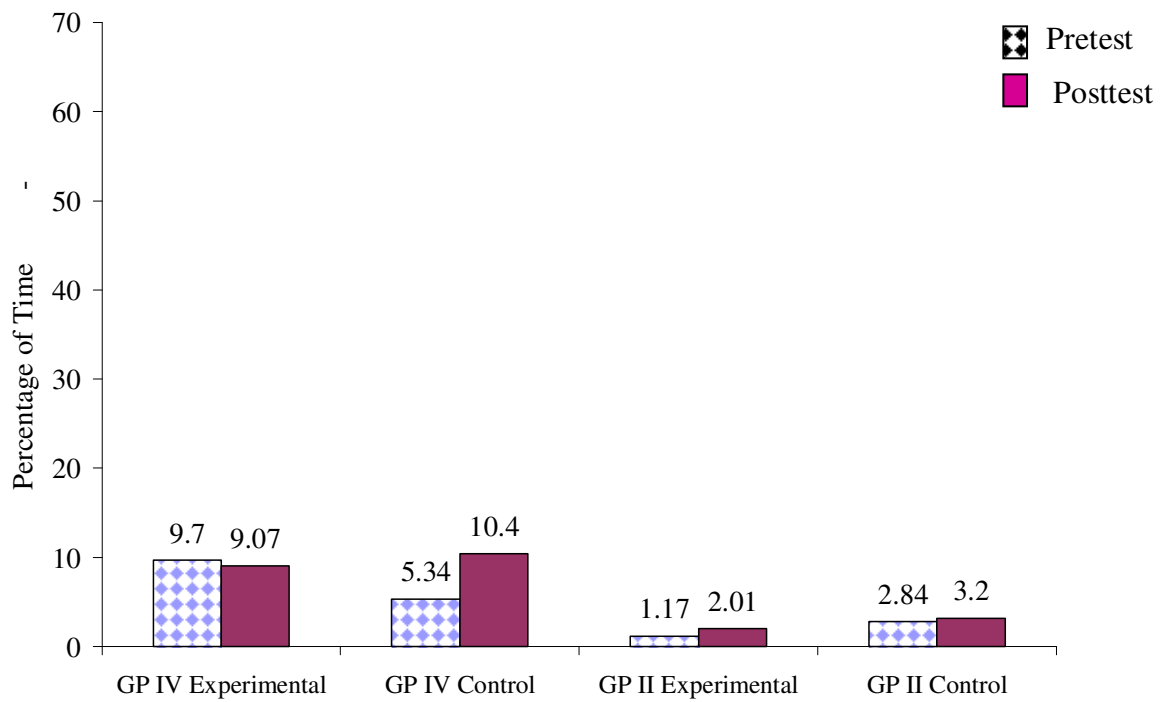


Figure 15. Sight-Reading Preparation: Tapping



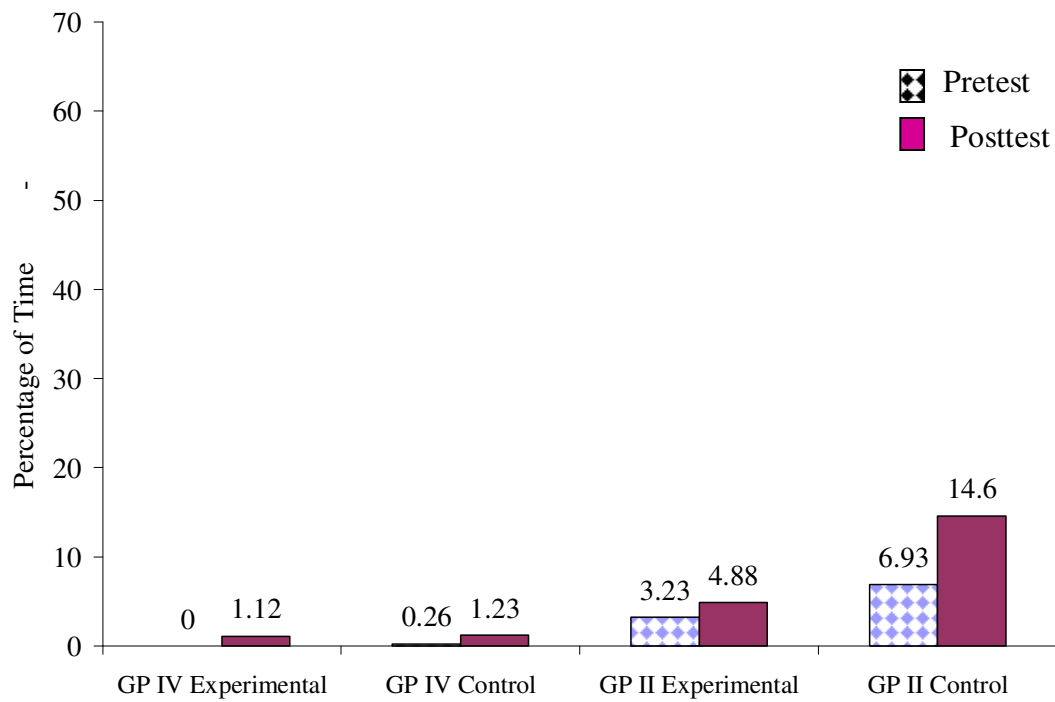


Figure 16. Sight-Reading Preparation: Singing

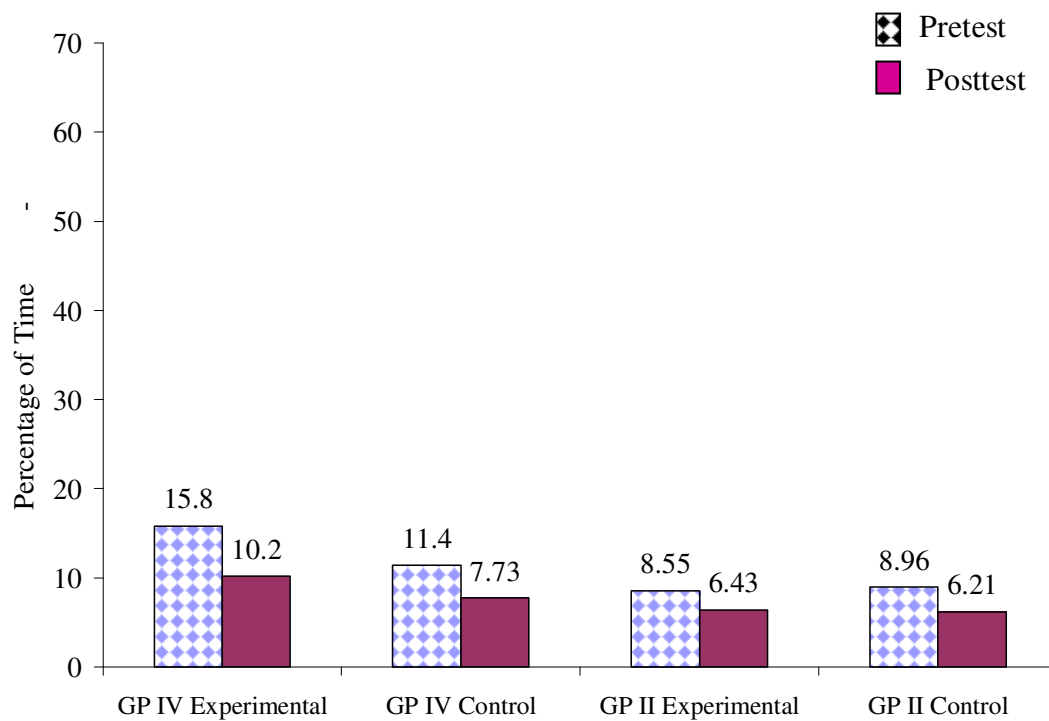


Figure 17. Sight-Reading Preparation: Other Miscellaneous Behavior

across levels and groups). Percentage of time involved in “other miscellaneous behavior” averaged 9.4% (across levels and groups) and was followed by tapping (5.5%, average percentage across levels and groups) and finally singing (4%, average across levels and groups).

Time spent in each category increased, decreased, or stayed the same across pretests and posttests. The amount of time participants spent finger shadowing (Figure 14) increased from pretest to posttest except for the Group Piano IV participants in the control group, and they spent slightly less time finger shadowing (4.3% less). Similarly, participants utilized more of their preparatory time tapping (Figure 15) – not by much more, but an increase nonetheless – during the posttest than the pretest. Group Piano IV participants in the experimental group, though, spent practically the same amount of time tapping during the pretest and posttest.

Albeit a small increase, an increase in average percentage of time singing did occur for all combinations of groups and levels from the pretest to the posttest. Contrastingly, less time was spent on posttests than pretests using the metronome (Figure 12) for all participants other than those in the Group Piano II control group, and they utilized the metronome for the same amount of time during the pretests and posttests. Furthermore, less time in “other miscellaneous behavior” (Figure 17) was documented on posttests across all groups and levels. Participants in Group Piano II spent less time writing during the posttest than the pretest (Figure 13) while Group Piano IV participants spent nearly the same amount of time writing during the posttest than the pretest. It is important to note that percentages of time spent in any activity during the two-minutes of sight-reading preparation did not vary more than 10% across pretests and posttests except for metronome use by Group Piano IV participants in the experimental group (Figure 12). The metronome was used less on the posttest for this group by an average of 12.6%.

## Attitude

Participants completed an attitudinal questionnaire during the pretest and posttest that was comprised of eleven items (Appendix J). Participants responded to each item by circling a number on a seven point Likert scale. Group Piano II and Group Piano IV participants completed the same questionnaire, and each participant filled out the questionnaire twice: once immediately following the videotaped sight-reading performance for the pretest, and then again following the videotaped sight-reading performance for the posttest. Table 5 displays the mean Likert response with the standard deviation for each questionnaire item on the pretest and posttest for control and experimental groups in Group Piano II, and Table 6 displays the mean Likert response with the standard deviation for each questionnaire item on the pretest and posttest for control and experimental groups in Group Piano IV. All participants responded to each item. Numbers show that average Likert responses did not differ much from pretest to posttest in either treatment group for Group Piano II (Table 5) or Group Piano IV (Table 6). More specifically, average Likert responses remained the same, increased by one point, or decreased by one point from pretest to posttest for all questionnaire items between treatment groups in both levels.

To determine if a significant difference in attitude toward sight-reading at the piano occurred from pretest to posttest, a separate Two-Way Chi Square test was conducted for each of the eleven questionnaire items. This was done for participants in Group Piano II and then again for participants in Group Piano IV. Group placement (experimental or control) and the direction of difference in posttest Likert scale response from pretest Likert scale response served as the two factors. The direction of difference was either positive, negative, or stayed the same. All tests were two-tailed with  $\alpha$  set at .05.

Table 5

## Group Piano II Attitudinal Results: Mean Likert Responses for Pretest and Posttest Questionnaires

| Abbreviated Questionnaire Item &<br>Layout of Likert Scale (1 to 7)   | Pretest C <sup>a</sup> |      | Posttest C <sup>a</sup> |      | Pretest E <sup>b</sup> |      | Posttest E <sup>b</sup> |      |
|---|------------------------|------|-------------------------|------|------------------------|------|-------------------------|------|
|   | Mean                   | SD   | Mean                    | SD   | Mean                   | SD   | Mean                    | SD   |
| 1. Currently, I would rate my keyboard sight-reading skills as:<br>( <i>Excellent – Poor</i> )              | 5.13                   | 0.81 | 4.19                    | 1.22 | 5.04                   | 1.02 | 3.57                    | 0.79 |
| 2. Compared to other students at my level, my sight-reading is:<br>( <i>Above average – Below average</i> ) | 4.25                   | 0.78 | 3.63                    | 1.03 | 3.96                   | 1.36 | 3.39                    | 1.34 |
| 3. I feel like sight-reading is an important skill.<br>( <i>Important – Unimportant</i> )                   | 1.50                   | 0.89 | 1.50                    | 0.63 | 1.61                   | 1.03 | 1.65                    | 0.76 |
| 4. I think it is worthwhile to improve my sight-reading skills.<br>( <i>Very – Not at all</i> )             | 1.50                   | 1.27 | 1.75                    | 1.29 | 1.44                   | 0.84 | 1.48                    | 0.67 |
| 5. Sight-reading is a skill that will benefit my future career.<br>( <i>Very – Not at all</i> )             | 1.38                   | 0.89 | 2.38                    | 1.75 | 1.61                   | 1.08 | 1.96                    | 1.46 |
| 6. I am capable of playing continuously despite errors.<br>( <i>Very – Not at all</i> )                     | 3.75                   | 1.44 | 3.13                    | 1.15 | 3.70                   | 1.72 | 3.04                    | 1.40 |
| 7. I tend to hesitate at the bar lines when sight-reading.<br>( <i>Always – Never</i> )                     | 4.19                   | 1.28 | 4.31                    | 0.70 | 3.92                   | 1.44 | 4.39                    | 1.49 |
| 8. If I miss a note while sight-reading, I can still move forward.<br>( <i>Always – Never</i> )             | 3.38                   | 1.59 | 3.44                    | 1.26 | 3.70                   | 1.15 | 2.87                    | 1.18 |
| 9. I determine key and time signature before I sight-read.<br>( <i>Always – Never</i> )                     | 1.69                   | 1.40 | 1.69                    | 0.95 | 1.52                   | 0.85 | 1.39                    | 0.72 |
| 10. I identify patterns in the score before I sight-read.<br>( <i>Always – Never</i> )                      | 3.69                   | 2.09 | 2.69                    | 1.66 | 2.48                   | 1.24 | 1.65                    | 0.71 |
| 11. I tap the rhythm before I sight-read.<br>( <i>Always – Never</i> )                                      | 3.63                   | 2.25 | 3.13                    | 1.75 | 3.30                   | 1.69 | 3.13                    | 1.55 |

<sup>a</sup>C = Control ( $n = 16$ )<sup>b</sup>E = Experimental ( $n = 23$ )

Table 6

## Group Piano IV Attitudinal Results: Mean Likert Responses for Pretest and Posttest Questionnaires

| Abbreviated Questionnaire Item &<br>Layout of Likert Scale (1 to 7)   | Pretest C <sup>a</sup> |      | Posttest C <sup>a</sup> |      | Pretest E <sup>b</sup> |      | Posttest E <sup>b</sup> |      |
|---|------------------------|------|-------------------------|------|------------------------|------|-------------------------|------|
|   | Mean                   | SD   | Mean                    | SD   | Mean                   | SD   | Mean                    | SD   |
| 1. Currently, I would rate my keyboard sight-reading skills as:<br>( <i>Excellent – Poor</i> )              | 4.83                   | 1.40 | 4.23                    | 1.13 | 4.70                   | 1.19 | 3.78                    | 1.24 |
| 2. Compared to other students at my level, my sight-reading is:<br>( <i>Above average – Below average</i> ) | 4.48                   | 1.70 | 4.09                    | 1.59 | 4.00                   | 1.21 | 3.61                    | 1.31 |
| 3. I feel like sight-reading is an important skill.<br>( <i>Important – Unimportant</i> )                   | 1.96                   | 1.43 | 2.40                    | 1.59 | 1.96                   | 1.11 | 1.65                    | 0.83 |
| 4. I think it is worthwhile to improve my sight-reading skills.<br>( <i>Very – Not at all</i> )             | 1.70                   | 1.30 | 2.23                    | 1.48 | 1.52                   | 0.85 | 1.57                    | 0.84 |
| 5. Sight-reading is a skill that will benefit my future career.<br>( <i>Very – Not at all</i> )             | 2.09                   | 1.60 | 3.00                    | 1.88 | 1.70                   | 0.97 | 1.83                    | 1.30 |
| 6. I am capable of playing continuously despite errors.<br>( <i>Very – Not at all</i> )                     | 3.57                   | 1.65 | 3.87                    | 1.52 | 3.83                   | 1.76 | 2.87                    | 1.79 |
| 7. I tend to hesitate at the bar lines when sight-reading.<br>( <i>Always – Never</i> )                     | 4.04                   | 1.52 | 3.61                    | 1.53 | 4.17                   | 1.72 | 4.52                    | 1.65 |
| 8. If I miss a note while sight-reading, I can still move forward.<br>( <i>Always – Never</i> )             | 3.48                   | 1.60 | 3.70                    | 1.30 | 3.96                   | 1.61 | 2.78                    | 1.41 |
| 9. I determine key and time signature before I sight-read.<br>( <i>Always – Never</i> )                     | 1.65                   | 0.89 | 2.09                    | 1.73 | 1.74                   | 1.18 | 1.35                    | 0.94 |
| 10. I identify patterns in the score before I sight-read.<br>( <i>Always – Never</i> )                      | 3.22                   | 1.83 | 2.35                    | 1.03 | 2.70                   | 1.49 | 1.96                    | 0.98 |
| 11. I tap the rhythm before I sight-read.<br>( <i>Always – Never</i> )                                      | 3.61                   | 1.99 | 3.04                    | 2.10 | 3.57                   | 1.97 | 4.00                    | 2.09 |

<sup>a</sup>C = Control ( $n = 23$ )<sup>b</sup>E = Experimental ( $n = 23$ )

Table 7 shows the results of the eleven Two-Way Chi Square tests calculated for Group Piano II. The Two-Way Chi Square tests calculated for each of the eleven questionnaire items showed no significant difference between what was observed and what was expected in Likert scale response from pretest to posttest except for questionnaire item eight. Questionnaire item 8 (in non-abbreviated form) read as follows: “If I miss a note while sight-reading, I am still able to move forward in the appropriate tempo of the piece, even if I have to drop out a hand for a few measures.” Each participant responded by circling a number on a scale of “1” (always) through “7” (never). A Two-Way Chi Square test showed a significant difference [ $\chi^2(2, 39) = 10.75, p < .01$ ] in participant responses across control and experimental groups for questionnaire item eight.

If a participant responded with a lower Likert scale number on the posttest than on the pretest, that meant he or she felt more confident in maintaining continuity while sight-reading by the time during the semester that the posttest occurred. If a participant responded with a higher Likert scale number on the posttest than on the pretest, that meant he or she felt less confident in maintaining continuity while sight-reading by the time during the semester that the posttest occurred. If a participant responded with the same Likert scale response on the posttest as the pretest, that meant he or she felt no change in his or her ability to maintain continuity while sight-reading by the time during the semester that the posttest occurred. Of the 23 Group Piano II participants in the experimental Group, 13 responded to questionnaire item eight with a lower (perceived improvement) Likert scale number on the posttest than on the pretest, 2 responded with a higher Likert scale number on the posttest than on the pretest, and 8 responded by circling the same response on the posttest and the pretest. Of the 16 Group Piano II participants in the control group, 5 responded with a lower (perceived improvement) Likert scale number on the posttest than on the pretest, 9 responded with a higher Likert scale number on the posttest than

on the pretest, and 2 responded by circling the same response on the posttest and the pretest. Therefore, by the end of the semester, Group Piano II participants in the experimental group felt more confident than at the beginning of the semester in their abilities to move forward, or maintain continuity, while sight-reading even if errors occurred while playing than Group Piano II participants in the control group.

Table 8 displays results of the eleven Two-Way Chi Square tests calculated for Group Piano IV. None of the Two-Way Chi Square tests calculated for each of the eleven questionnaire items revealed significant changes in direction regarding participants' Likert scale responses from pretest to posttest across control and experimental groups for participants in Group Piano IV. The Two-Way Chi Square test for questionnaire item eight (significant in Table 7 for Group Piano II) approached significance [ $\chi^2(2, 46) = 5.72, p = 0.06$ ] but did not reach significance. The same held true for questionnaire item six. Item six read (in non-abbreviated form) as follows: "I feel like I am capable of maintaining continuity (not hesitating) even when pitch and rhythm errors occur." The Two-Way Chi Square test for questionnaire item six did not reach significance [ $\chi^2(2, 46) = 5.57, p = 0.06$ ]. The content of questions six and eight are closely related; therefore this tendency toward significance for both of these questionnaire items was not surprising.

Placed at the very top of the questionnaire was the isolated question (Appendix J), "Have you ever seen or played the eight-measure piece you just sight-read before?" Participants responded by checking one of four possible answers: (1) yes, (2) no, (3) it looks familiar, or (4) I don't know. The achievement portion of the pretest and posttest – sight-reading an eight-measure piece at the piano – directly preceded participants' completion of the attitudinal questionnaire.

Table 7

Two-Way Chi Square Results: Attitudinal Results for Group Piano II

| Abbreviated Questionnaire Item   | N  | DF | $\chi^2$ Value | P-Value |
|--|----|----|----------------|---------|
| 1. Currently, I would rate my keyboard sight-reading skills as:          | 39 | 2  | 1.95           | 0.38    |
| 2. Compared to other students at my level, my sight-reading skills are:  | 39 | 2  | 0.92           | 0.63    |
| 3. I feel like sight-reading is an important skill.                      | 39 | 2  | 0.05           | 0.98    |
| 4. I think it is worthwhile to improve my sight-reading skills.          | 39 | 2  | 1.30           | 0.52    |
| 5. I think sight-reading is a skill that will benefit my future career.  | 39 | 2  | 1.37           | 0.54    |
| 6. I am capable of playing continuously despite pitch and rhythm errors. | 39 | 2  | 2.14           | 0.34    |
| 7. I tend to hesitate at the bar lines when sight-reading.               | 39 | 2  | 0.01           | 0.99    |
| 8. If I miss a note while sight-reading, I can still move forward.       | 39 | 2  | 10.75          | < 0.01* |
| 9. I determine the key and the time signature before I sight-read.       | 39 | 2  | 3.31           | 0.19    |
| 10. I identify patterns in the score before I sight-read.                | 39 | 2  | 0.42           | 0.81    |
| 11. I tap the rhythm before I sight-read.                                | 39 | 2  | 2.76           | 0.25    |

\*denotes significance



Table 8

Two-Way Chi Square Results: Attitudinal Results for Group Piano IV

| Abbreviated Questionnaire Item   | N  | DF | $\chi^2$ Value | P-Value |
|--|----|----|----------------|---------|
| 1. Currently, I would rate my keyboard sight-reading skills as:          | 46 | 2  | 1.07           | 0.59    |
| 2. Compared to other students at my level, my sight-reading skills are:  | 46 | 2  | 0.36           | 0.84    |
| 3. I feel like sight-reading is an important skill.                      | 46 | 2  | 2.62           | 0.27    |
| 4. I think it is worthwhile to improve my sight-reading skills.          | 46 | 2  | 1.04           | 0.59    |
| 5. I think sight-reading is a skill that will benefit my future career.  | 46 | 2  | 1.83           | 0.40    |
| 6. I am capable of playing continuously despite pitch and rhythm errors. | 46 | 2  | 5.57           | 0.06    |
| 7. I tend to hesitate at the bar lines when sight-reading.               | 46 | 2  | 4.44           | 0.11    |
| 8. If I miss a note while sight-reading, I can still move forward.       | 46 | 2  | 5.72           | 0.06    |
| 9. I determine the key and the time signature before I sight-read.       | 46 | 2  | 4.60           | 0.10    |
| 10. I identify patterns in the score before I sight-read.                | 46 | 2  | 0.42           | 0.81    |
| 11. I tap the rhythm before I sight-read.                                | 46 | 2  | 3.81           | 0.15    |

Therefore, the participants had just finished sight-reading the eight-measure piece to which this question referred when they were given the attitudinal questionnaire.

Table 9 displays students' responses to this question on both the pretest and the posttest. All participants ( $N = 85$ ) responded "no" when asked if they had ever played the pretest sight-reading exercise before. The investigator composed the sight-reading exercise to ensure that students had not played it prior to the pretest, so this unanimous response was expected.

Responses to this question at the posttest, however, indicated that the majority of the participants did not recognize the sight-reading exercise from the pretest despite the fact that all participants had played the exact eight-measure exercise during the pretest. More specifically, 72 of the 85 participants (84.7%) responded "no," that they had never seen the exercise before. Six participants (7%) responded that "it looked familiar," three (3.5%) responded "I don't know" and only four participants (4.7%) responded "yes" to having played the exercise before.

Table 9

Recognition of the Sight-Reading Excerpt Used in the Pretest and the Posttest

|                   | Pretest ( $N = 85$ ) |        | Posttest ( $N = 85$ ) |         |
|-------------------|----------------------|--------|-----------------------|---------|
| No                | 85                   | (100%) | 72                    | (84.7%) |
| Yes               | 0                    | (0%)   | 4                     | (4.7%)  |
| It looks familiar | 0                    | (0%)   | 6                     | (7%)    |
| I don't know      | 0                    | (0%)   | 3                     | (3.5%)  |

The participants in the experimental group also completed an addendum to the attitudinal questionnaire specific to the peer teaching experience. The participants in Group Piano II filled out a questionnaire comprised of 21 Likert scale questions and four open-ended questions

concerning their experience as a tutee (Appendix K). The participants in Group Piano IV filled out a questionnaire comprised of 22 Likert scale questions and five open-ended questions concerning their experience as a tutor (Appendix L). All Likert scales were seven point scales. Each Group Piano II participant in the experimental group ( $n = 23$ ) responded to all 21 questions; average responses and standard deviations are displayed in Table 10. Each Group Piano IV participant in the experimental group ( $n = 23$ ) responded to all 22 questions; average responses and standard deviations are displayed in Table 11.

Table 10 shows that the majority of the averaged responses, 14 of the 21 questionnaire items, from Group Piano II tutees fell within a mean rating of “2.0-2.9.” Four of the averaged responses fell within a mean rating of “3.0-3.9,” two of the averaged responses fell within a mean rating of “1.0-1.9,” and only one response received a mean rating of “4.93.” This item asked tutees to rate their sight-reading skills from excellent “1” to poor “7” at the beginning of the semester. Considering the Likert scale was a seven point scale for all questionnaire items, tutees seemed to have an overall positive attitude toward the peer teaching experience and their personal sight-reading abilities.

Table 11 shows that the majority of the averaged responses, 15 of the 22 questionnaire items, from Group Piano IV tutors fell within a mean rating of “2.0-2.9.” Four of the averaged responses fell within a mean rating of “1.0-1.9,” and two of the responses fell within a mean rating of “4.0-4.9” (Items 2 & 15). Both of these questionnaire items were related to rating sight-reading abilities at the beginning of the semester. Only one response received a mean rating of “3.09” (Item 3). This item asked tutors to rate their current sight-reading skills. Considering the Likert scale was a seven point scale for all questionnaire items, tutors seemed to have an overall positive attitude toward the peer teaching experience and their personal sight-reading abilities.

Table 10

Group Piano II: Average Likert Scale Response to Each Addendum Item

| Abbreviated Addendum Item   | Layout of Likert Scale<br>1 to 7 | Average<br>Response | SD   |
|---|----------------------------------|---------------------|------|
| 1. Overall, I would rate the peer teaching experience as:         | Positive – Negative              | 2.65                | 1.07 |
| 2. My sight-reading skills at the beginning of the semester were: | Excellent – Poor                 | 4.93                | 1.28 |
| 3. Currently, I would rate my sight-reading skills as:            | Excellent – Poor                 | 3.28                | 0.69 |
| 4. I feel like my sight-reading has improved over the semester.   | Improved – Did not improve       | 2.65                | 1.50 |
| 5. Being tutored caused me to examine my sight-reading process.   | Yes, a Lot – No, not at all      | 3.35                | 1.50 |
| 6. Being tutored caused my sight-reading skills to improve.       | Yes, a Lot – No, not at all      | 2.70                | 1.22 |
| 7. Playing duets made me more aware of continuity.                | More aware – Not more aware      | 2.48                | 1.50 |
| 8. I felt confident when playing duets with my tutor.             | Confident – Not at all confident | 3.00                | 0.90 |
| 9. Sight-reading duets was fun and motivational.                  | Yes, very – No, not at all       | 2.83                | 1.53 |
| 10. My tutor was knowledgeable enough to teach me.                | Yes, very – No, not at all       | 2.61                | 1.50 |
| 11. I felt like peer teaching sessions were worthwhile.           | Worthwhile – Not worthwhile      | 2.93                | 1.52 |
| 12. I would recommend peer teaching to future piano students.     | Yes, highly – No, not at all     | 3.04                | 1.72 |
| 13. Being tutored in sight-reading was a low-pressure situation.  | Low Pressure – High Pressure     | 1.91                | 1.00 |

(Table 10 continued)

|  |                               |      |      |
|--|-------------------------------|------|------|
| 14. My tutor and I worked well together.                             | Yes, very well – No, not well | 1.52 | 0.80 |
| 15. My tutor helped me identify patterns before sight-reading.       | Yes, a lot – No, not at all   | 2.22 | 1.54 |
| 16. My tutor felt accountable for my personal progress.              | Yes, a lot – No, not at all   | 2.96 | 1.19 |
| 17. I feel like I improved as a sight-reader because of my tutor.    | Improved – Did not improve    | 2.91 | 1.41 |
| 18. After 8 sessions, I played continuously when we played duets.    | Yes, very – No, not at all    | 2.22 | 1.00 |
| 19. After 8 sessions, I played continuously when playing alone.      | Yes, very – No, not at al     | 2.61 | 1.08 |
| 20. After 8 sessions, I was generally able to sight-read accurately. | Very accurate – Not accurate  | 2.52 | 0.99 |
| 21. My tutor thought our sessions were worthwhile.                   | Yes, very – No, not at all    | 2.70 | 1.36 |

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Table 11

Group Piano IV: Average Likert Scale Response to Each Addendum Item

| Abbreviated Addendum Item   | Layout of Likert Scale<br>1 to 7 | Average<br>Response | SD   |
|---|----------------------------------|---------------------|------|
| 1. Overall, I would rate the peer teaching experience as:         | Positive – Negative              | 1.82                | 0.80 |
| 2. My sight-reading skills at the beginning of the semester were: | Excellent – Poor                 | 4.27                | 1.42 |
| 3. Currently, I would rate my sight-reading skills as:            | Excellent – Poor                 | 3.09                | 1.31 |
| 4. I feel like my sight-reading has improved over the semester.   | Improved – Did not improve       | 2.82                | 1.56 |
| 5. Teaching sight-reading caused me to examine my own process.    | Yes, a lot – No, not at all      | 1.86                | 0.89 |
| 6. Teaching sight-reading improved my own skills.                 | Yes, a lot – No, not at all      | 2.18                | 1.10 |
| 7. Playing duets made me more aware of continuity                 | More aware – Not more aware      | 2.00                | 1.20 |
| 8. Sight-reading duets was fun and motivational.                  | Yes, very – No, not at all       | 2.45                | 1.30 |
| 9. I was knowledgeable enough to teach sight-reading.             | Yes, very – No, not at all       | 2.45                | 1.80 |
| 10. I felt like peer teaching sessions were worthwhile.           | Worthwhile – Not worthwhile      | 2.32                | 1.13 |
| 11. I would recommend peer teaching to future piano students.     | Yes, highly – No, not at all     | 2.36                | 1.26 |
| 12. Teaching my tutee was a low-pressure situation.               | Low Pressure – High Pressure     | 2.14                | 1.42 |
| 13. My tutor and I worked well together                           | Yes, very well – No, not well    | 1.32                | 0.57 |

(Table 11 continued)

|   |                             |      |      |
|---|-----------------------------|------|------|
| 14. I felt accountable for my tutee's sight-reading progress.   | Yes, a lot – No, not at all | 2.27 | 1.35 |
| 15. In the beginning, I would rate my tutee's sight-reading as: | Excellent – Poor            | 4.45 | 1.23 |
| 16. Currently, I would rate my tutee's sight-reading:           | Excellent – Poor            | 2.86 | 1.08 |
| 17. My tutee benefited from the peer teaching sessions.         | Yes, a lot – No, not at all | 2.05 | 1.00 |
| 18. Because of my teaching, my tutee's sight-reading improved.  | Yes, a lot – No, not at all | 2.57 | 1.05 |
| 19. After 8 sessions, my tutee sight-read duets continuously.   | Yes, very – No, not at all  | 1.95 | 0.90 |
| 20. After 8 sessions, my tutee sight-read continuously alone.   | Yes, very – No, not at all  | 2.18 | 0.96 |
| 21. After 8 sessions, my tutee generally sight-read accurately. | Yes, very – No, not at all  | 2.23 | 1.02 |
| 22. I feel like my tutee thought our sessions were worthwhile.  | Yes, very – No, not at all  | 2.52 | 1.10 |

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Responses were compiled for the four open-ended questions for Group Piano II participants in the experimental group (Appendix P). It was optional for participants to answer the four open-ended questions at the end of the addendum to the questionnaire. Of the 23 participants, 22 (96%) responded to the first question, 20 (90%) responded to the second, 13 (57%) responded to the third, and 5 (22%) responded to the fourth. The 22 responses to the first open-ended question, “For me, the most valuable part of this experience – being tutored in sight-reading – was:” were loosely categorized into three general responses: (1) extra time to practice sight-reading on a consistent basis – 10 responses, (2) being tutored one-on-one in sight-reading – 7 responses, and (3) improved my sight-reading skills and/or confidence in sight-reading – 4 responses. The response not included in one of these categories simply stated “very beneficial.”

The 20 responses to the second open-ended question, “The most difficult or frustrating part of this experience was:” were loosely categorized into two general responses. These categories were: (1) the sight-reading process in general – that it was difficult and/or the frustration that accompanied errors – 8 responses, and (2) scheduling peer sessions – 4 responses. The remaining 8 responses varied greatly and did not fit into one of these categories. These responses ranged from “being videotaped” to “nothing” and can be found in Appendix P.

The 13 responses to the third open-ended question, “What suggestions would you make regarding the peer teaching process?” also varied greatly from one another. Four of these responses could be generally categorized into “I would not change anything about the process” while the other 9 responses all differed. For example, they ranged from “Make sure the tutor is positive because mine was and it helps a lot!” to “More solo works – that’s what’s on the tests.” The five responses to the fourth open-ended question “Any additional comments?” all differed from one another as well; these responses are in Appendix P.



Responses were compiled for the five open-ended questions for participants in Group Piano IV (Appendix Q). Group Piano IV participants in the experimental group had the option of answering the five open-ended questions (they had one more open-ended question than Group Piano II participants in the experimental group) at the end of the addendum to the attitudinal questionnaire. Of the 23 participants, 20 (90%) responded to the first question, 21 (92%) to the second, 20 (90%) to the third, 14 (61%) to the fourth, and 7 (30%) to the fifth. The 20 responses to the first open-ended question, “For me, the most valuable part of this experience – teaching sight-reading to my partner – was:” were loosely categorized into one of four general responses: (1) Improving my sight-reading skills – 8 responses, (2) Gaining teaching experience – 6 responses, (3) Developing camaraderie with another music student – 3 responses, and (4) Seeing my partner gain confidence and/or improve – 3 responses. Two responses to this question were two sentences in length, and each sentence fit in a different category; these responses were included twice in the above tally. The response “Doing this in front of a camera – generally I would be very nervous.” was the only response that did not loosely fit under any of the four categories.

The 21 responses to the second open-ended question, “The most difficult or frustrating part of this experience was:” were loosely categorized into one of three general responses: (1) It took extra time – 4 responses, (2) Scheduling – 4 responses, and (3) Messing Up/Not being good at sight-reading or teaching sight-reading – 5 responses. The remaining seven responses not included in one of these three categories ranged from “Trying to play my part correctly while trying to listen to my partner” to “staying focused throughout the process.” All responses to this question are in Appendix Q.

The 20 responses to the third open-ended question, “Describe your tutee’s biggest obstacle when sight-reading and explain how you attempted to address this issue in your teaching,” were loosely categorized into one of three general responses: (1) Continuity – 6 responses, (2) Playing hands together – 5 responses, (2) Note accuracy – 4 responses. Six responses did not fit into any of these categories and ranged from “He had trouble looking ahead while playing, which could only be fixed by looking ahead” to “Did not recognize I, IV, and V chords.” All responses can be found in Appendix Q.

The 14 responses to the fourth open-ended question, “What suggestions would you make regarding the peer teaching process?” were difficult to categorize as they varied so greatly. Three of these responses dealt with the possibility of incorporating some type of teacher training into the Group Piano IV curriculum to help tutors teach tutees better. The other 11 responses were so different that they could not be categorized. Finally, 4 of the 7 responses to the fifth open-ended question, “Any additional comments?” could be categorized as “Peer teaching was a fun, enjoyable experience” while the remaining 3 responses varied.

### Peer Teaching

Participants in the experimental group were involved in eight peer teaching sessions between the pretest and the posttest. Group Piano II participants in the experimental group ( $n = 23$ ) were tutees while Group Piano IV participants in the experimental group ( $n = 23$ ) were tutors. Thus, there were a total of twenty-three peer dyads in the experimental group. During these videotaped peer teaching sessions, the Group Piano IV participant (the tutor) guided the Group Piano II participant (the tutee) through the sight-reading process. All peer tutors followed a task analysis (Appendix C) for each of the eight peer teaching sessions; all sessions involved sight-reading duets as well as solo sight-reading performed by the tutee. On average, peer

teaching sessions lasted approximately 20 minutes, but peer sessions were not limited to a specific amount of time. Rather, pairs were instructed to work through the task analysis and were informed that when they had completed it they were permitted to leave. Because all peer teaching sessions were videotaped, the length of each session was recorded and documented.

Figure 18 displays the average amount of time spent in sessions each week among all 23 pairs. The average length of each peer session was approximately 20 minutes; this length of time was fairly stable across all weeks except in the seventh week when the average dropped to 16 minutes. This figure also shows the maximum and minimum amount of time it took a pair to complete each peer session. For example, during the first week, the shortest session only lasted 10 minutes, the average session was 20 minutes, and the longest session was 32 minutes.

SCRIBE© software was utilized to categorize and document participant behavior during peer teaching sessions. Figure 19 is a pie graph that represents the way peer pairs utilized their time (on average) during peer teaching sessions across three categories: (1) Piano Playing, (2) Peer Teaching, and (3) Other. The term “other” included any behavior that was not playing the piano or peer teaching. This included setting up materials, talking about subject matter other than sight-reading, staring at the score in silence, performing music on the piano that was not included in the sight-reading materials for that week, and so forth. As is evident from Figure 19, 30% of each peer teaching session was spent sight-reading at the piano, 56% of each peer teaching session was utilized by peer teaching, and 14% of each session was considered “other.”

Attending peer teaching sessions (for participants in the experimental group) and independent sight-reading sessions (for participants in the control group) counted toward a percentage of each student’s group piano grade (Table 2). After some rescheduling of weekly

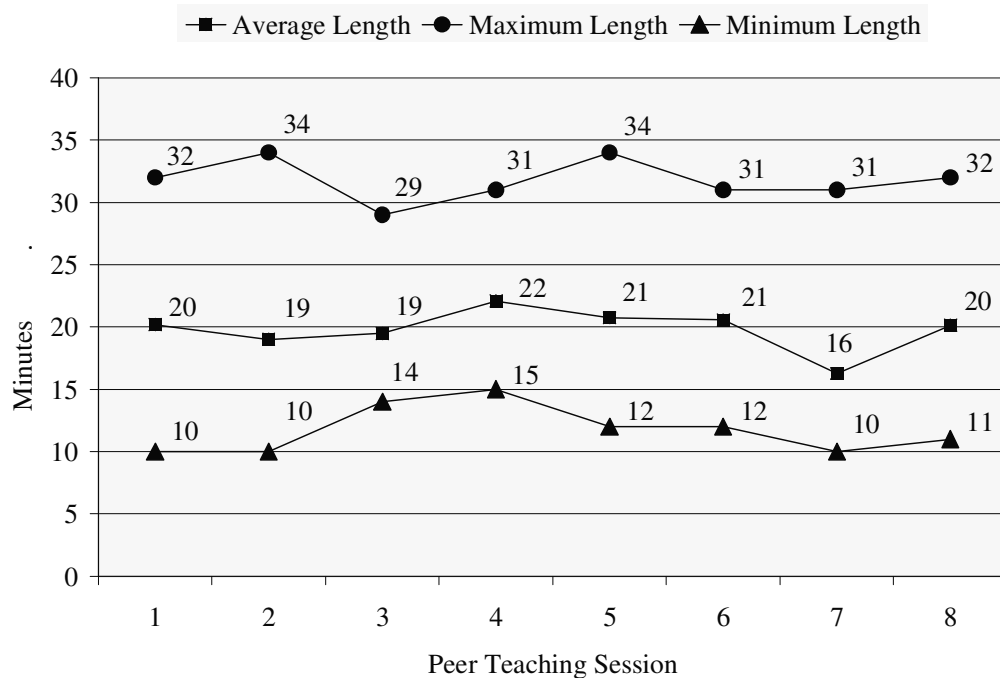


Figure 18. Average Length of Peer Teaching Sessions

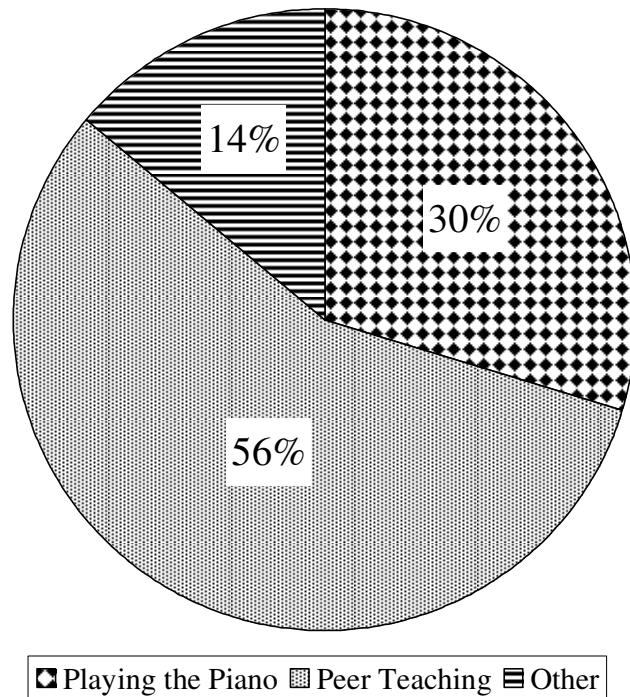


Figure 19. Average Amount of Time Spent Per Category During Peer Teaching Sessions

sessions due to choir tours, conferences, illness, and so on, all (100%) eight peer teaching sessions were completed by each peer pair, with 184 peer teaching sessions (23 pairs x 8 weeks) completed in all. The majority of independent sight-reading sessions were completed by participants in the control groups. Of the 312 (39 participants in the control group x 8 weeks) independent sight-reading sessions that should have been completed, 296 (95%) were actually completed. Despite email reminders, class announcements, and grade deductions, 5% of the independent sight-reading sessions remained incomplete at the conclusion of the semester.

## CHAPTER 4

### DISCUSSION

The current study was undertaken to expand what is currently known about effective instructional techniques in the group piano classroom. Instructors of group piano want their students to obtain proficiency in all functional keyboard skills – sight-reading, accompanying, harmonization, transposition, open score, repertoire, and technique. Sight-reading is possibly the most critical keyboard skill taught in group piano because it affects student abilities in other keyboard skills. A student who excels in sight-reading is more likely to learn repertoire and accompaniments with greater ease, to harmonize melodies and transpose pieces more quickly, and to read open score with less difficulty than a student who struggles with sight-reading.

Teaching sight-reading effectively can be a difficult process. Studies have shown that peer teaching can be an effective way to teach a concept or a skill while simultaneously increasing students' levels of active involvement in the teaching and learning process (Whitman, 1988). This study served to determine whether involvement in peer teaching the skill of sight-reading was an effective instructional tool when employed in the group piano setting.

The participants in this study were undergraduate music majors enrolled in their second semester (Group Piano II) or fourth semester (Group Piano IV) of a four-semester group piano sequence. Control and experimental groups comprised the two treatment groups in each level. Group Piano IV participants in the experimental group were paired with Group Piano II participants also in the experimental group, resulting in 23 dyads. Each dyad participated in eight peer teaching sessions across the semester; Group Piano IV participants served as tutors while Group Piano II participants served as tutees. Peer teaching sessions occurred outside scheduled class time and consisted of sight-reading duet and solo repertoire. Members of the control group

also participated in eight sight-reading sessions outside scheduled class time across the semester; these sessions were completed individually and did not involve peer teaching. Just as research has determined the effectiveness of peer teaching in a variety of settings and disciplines (Alexander & Dorow, 1983; Coyne, 1978; Morgan & Toy, 1970), the results of the present study provide evidence that peer teaching may be an effective method of instruction when implemented in the group piano setting.

#### Achievement in Sight-Reading

Average sight-reading scores revealed that all participants, regardless of treatment group or level, made significant gains in their sight-reading abilities. It was expected that participants would improve from the beginning of the semester to the end of the semester due to their enrollment and participation in a group piano course, and still this is a noteworthy finding. Quantitative research in the group piano setting is sparse, and these data specifically highlight the effectiveness of group piano classes in the university setting. Institutions desiring to add a group piano program, increase the current number of semesters that group piano is required for music majors, or make a case for maintaining group piano as part of a curriculum, can benefit from empirical data that show a significant difference in student achievement toward keyboard sight-reading skills from the beginning of a semester to the end of a semester.

Analysis showed that tutors in the experimental group scored significantly higher on the sight-reading posttest than their Group Piano IV colleagues in the control group, suggesting that teaching the skill of sight-reading may increase personal achievement in the skill. As the investigator in this study, I was not surprised by this finding. Tutors were given the opportunity to guide their peer tutee through the sight-reading process across the semester. It is likely that many of the tutors spent more time thinking about the skill of sight-reading, and thinking about it

in different ways, than their control group peers. In preparing for peer teaching sessions, the tutors most likely studied the weekly task analysis that was given to them, and subsequently planned how they would guide their tutee through the sequential instructional steps toward sight-reading success. One tutor wrote that the most difficult or frustrating part of the peer teaching experience was “preparing for the sight-reading sessions – (just because it took a little bit of time)” and another tutor wrote that peer teaching “required me to prepare ahead of time and think like my student” (Appendix Q).

While engaging in preparatory behaviors which may have included thinking about the skill of sight-reading and its acquisition, it is likely that the tutors also spent time in preparatory practice on the piano. Tutors expressed the desire to be good performance models for their tutees. It is very possible that tutors spent more time practicing at the piano than their control group peers, and this could have contributed to higher performance scores. However, because data were not collected concerning the amount of individual practice time that each participant spent per week at the piano, no conclusions can be made regarding time spent practicing and its influence on sight-reading achievement in the present study.

In addition to preparatory behaviors, it is possible that the very act of teaching may have influenced the tutors’ sight-reading performance. Benware and Deci (1984) and Annis (1983) concluded that when a person teaches a concept or skill to someone else that the mental process differs from that which takes place when simply learning a new concept or skill. Overall, it is likely that the tutors approached sight-reading much differently than their control group peers because they were provided with the opportunity to teach the skill. Studies have shown that peer teaching positively affects tutors (Coyne, 1978; Morgan & Toy, 1970), and it seems that the present study supports these findings with regard to tutor achievement in sight-reading.



The positive findings regarding tutor sight-reading achievement lead to many implications for the group piano classroom. Instructors should consider incorporating as many opportunities as possible for students to teach concepts and skills that are presented in group piano class. For example, students could be assigned a day or several days each semester to lead the other students through a short, ten minute exercise that might include their daily sight-reading, harmonization, transposition, or accompanying instruction. Peer teaching pairs could be organized within intact classes and pairs could alternate taking on the role of peer tutor and peer tutee. Universities that offer separate group piano classes for music majors and non-music majors could organize peer teaching pairs among the classes. This way, all music majors would have the opportunity to be the peer tutor while non-music majors could serve as peer tutees. Furthermore, instructors could consider implementing “teaching concepts” into their group piano assessments. As part of an exam, students could be provided with a piano score, and be instructed to write the incremental steps they would employ if teaching the music to someone else.

Unlike the tutors in the present study, the tutees did not perform significantly higher on the posttest than their Group Piano II colleagues in the control group. This was unexpected, as I had thought that the tutees, who received one-on-one sight-reading instruction from a tutor for eight weeks, would have outscored the participants in the control group who sight-read independently. Furthermore, these findings contradict the results of other peer teaching studies that have found peer teaching experiences to significantly improve achievement scores for the peer tutee (Alexander & Dorow, 1983; Klosterman, 1970).

It is possible that eight weeks was not a long enough treatment period to show a significant improvement in tutee achievement scores. If peer teaching sessions had occurred for twelve weeks, fifteen weeks, or even over the course of an entire academic year, then tutees may

have performed significantly higher than their control group peers. Observation data showed that less than one third of the total peer teaching time across all sessions was devoted to actually playing the piano. It is very possible that had more time been spent physically practicing the skill of sight-reading at the piano, then tutees would have made greater achievement gains.

It is important to note that teacher influence during group piano classes may have influenced the overall achievement results for all participant groups. Four different instructors taught the eight classes involved in the present study. While I, the investigator, taught all four sections of Group Piano IV, three different instructors taught the four sections of Group Piano II. Students in each level sight-read the same materials and followed the same academic calendar, and group piano instructors followed the same sight-reading task analyses. Despite these similarities, differences still existed among the instructors. At the beginning of the semester, I had six years of group piano teaching experience, a second instructor had three years of experience, a third instructor had three semesters of experience, and a fourth instructor had only one semester of group piano teaching experience. Differences in experience could have certainly led to differences in teaching, regardless of attempts to control for content. Furthermore, due to past graduate assistantship assignments, I had taught many of the students in my four sections of Group Piano IV prior to the spring semester. This was also true for the group piano instructor who taught both sections of the experimental group in Group Piano II. Both of us had established a rapport with some of our students before the semester began, and it is possible that this may have influenced the achievement outcomes found in the present study.

Achievement results revealed a significant difference in treatment groups for the participants in Group Piano II. These results suggest that Group Piano II participants in the experimental group were likely a stronger group of pianists than those in the control group; it

was evident that experimental scores were consistently higher than control scores across pretests and posttests. While this may not have been an ideal statistical model – having a stronger group of pianists in one of the treatment groups – it was a realistic model regarding the student populations that comprise group piano classes at the collegiate level. In university settings, group piano instructors do not have the luxury of assigning each student to a specific section within a given level. Students in the present study registered for classes according to their scheduling preferences, and at the time of class registration students were not aware of treatment conditions. It is important to note that class assignments of this kind have created unbiased sampling in previous studies (Cassidy, Betts, & Hanberry, 2001; Hanberry, 2004). Therefore, it seems likely that from time to time certain classes will, by chance, be stronger than others.

Because of the procedure used to evaluate sight-reading performances, data were available regarding the breakdown of the five components [pitch in the right hand (PR), pitch in the left hand (PL), rhythm in the right hand (RR), rhythm in the left hand (RL), and continuity (C)] used to determine overall sight-reading pretest and posttest scores. Four of these components were hand specific. Scores for right hand rhythmic accuracy and right hand pitch accuracy were generally higher than scores for left hand rhythmic accuracy and left hand pitch accuracy in both Group Piano II and Group Piano IV for pretests and posttests. These findings compliment the results of previous research which suggest that right hand scores on piano performance tasks of undergraduate non-keyboard music majors are typically higher than left hand scores (Betts & Cassidy, 2000; Cassidy, Betts, & Hanberry, 2001).

In most group piano literature and sight-reading exercises, a melody is written for the right hand to play, and a harmonic accompaniment (usually blocked chords, or an “Alberti bass”) is written for the left hand to play. In the present study, it is likely that overall right hand

accuracy was higher than overall left hand accuracy because the pretests and posttests required the students to play the melody line with the right hand and the harmonic accompaniment with the left hand. Research suggests that melody lines are played with more accuracy than harmonic accompaniments regardless of the hand that is playing the melody (Hanberry, 2004).

Since most harmonic accompaniments are played with the left hand, and this seems to be a weak area for many group piano students, perhaps a variety of instructional strategies should be devoted to the development of left hand competency. One of these instructional strategies may include supplementing and arranging traditional sight-reading exercises and other piano performance materials such that students have more opportunities to play the melody line with the left hand, thereby helping students to build confidence in their ability to successfully use their left hand at the piano.

Of the five components that comprised each overall sight-reading score, continuity (C) scores stood out because of consistent high scores across pretests and posttests, treatment groups, and even group piano levels (Figures 10 and 11). These high scores were somewhat surprising as students often struggle with continuity when sight-reading during class. It is interesting to note, however, that Kostka (2000) also found consistent continuity scores across pretests and posttests when researching the effects of error-detection practice on keyboard sight-reading achievement of undergraduate music majors.

It is possible that the consistent high continuity scores may have been due to one, or both, of the following two factors. First, the directions that were read aloud to each participant before beginning the pretest and posttest stressed the importance of playing continuously: “It is important that you continue to play without hesitating or stopping regardless of any errors that might occur” (Appendix N). Second, the metronome remained on while participants performed

the sight-reading exercise. It was imperative to the design of the present study that the metronome be used during testing to control for tempo effects. The metronome was not typically used during class when practicing sight-reading, however, and having the metronome on during sight-reading pretests and posttests may have made the students more aware of continuity. In reflection, the use of the metronome may have affected overall achievement scores. It is possible that more errors in continuity and less errors in pitches and rhythms could have occurred had the metronome not been used.

### Attitudinal Questionnaires

In addition to sight-reading an eight-measure exercise for the pretest and posttest, participants also completed an eleven-item attitudinal questionnaire (Appendix J). Participants responded to all questionnaire items using a seven-point Likert scale. At the time of the posttest, Group Piano II tutees and Group Piano IV tutors completed an addendum to the questionnaire specific to the peer teaching experience (Appendix K and L, respectively). These addendums were comprised of Likert scale questions as well as open-ended questions.

I was initially concerned that the participants' attitudes would be more negative toward sight-reading at the time of the posttest due to the amount of time outside of class that they were required to spend sight-reading at the piano. It seems that my concerns were unwarranted. The requirement of additional weekly sight-reading practice (independent sight-reading for participants in the control group and sight-reading in peer teaching sessions for members of the experimental group) outside of regularly scheduled classes did not cause participants' attitudinal responses to significantly change in a more negative direction. This was a positive finding, and may serve to assuage similar concerns of other group piano instructors who are considering the implementation of peer teaching experiences outside of class.

Research has suggested that peer teaching may foster and shape positive attitudes (Goliger, 1995; Kassner, 2002; McGee et al., 1977). It was interesting to find that only one question from the attitudinal questionnaire revealed a positive significant change in attitude from pretest to posttest, and this difference occurred for the experimental Group Piano II participants (tutees) in response to the following item: “If I miss a note while sight-reading, I am still able to move forward in the appropriate tempo of the piece, even if I have to drop out a hand for a few measures.” Continuity was emphasized in all group piano classes, but only participants in the experimental group had the opportunity to sight-read duets with their peer partner each week during peer teaching sessions. Playing duets emphasized continuity. Moving forward after a mistake was essential if peer tutor and peer tutee were going to play together in time. Furthermore, participants in the Group Piano II experimental group had a peer tutor to remind them to keep going when errors were made, and to reiterate and suggest strategies (i.e. temporarily dropping a hand) when hesitations occurred.

Analyses for the attitudinal questionnaire in Group Piano IV showed no significant change in attitude from pretest to posttest for any of the eleven items, but attitudinal questionnaire item 6 and item 8 did approach significance for the experimental participants (tutors). Both of these items were related in that they addressed student confidence toward maintaining continuity while sight-reading. Several factors occurred during peer teaching sessions that could have influenced tutors’ attitude toward continuity. Peer teaching packets distributed weekly to the tutors included task analyses that emphasized the importance of moving forward during sight-reading. Tutors were instructed to encourage continuity while playing, to facilitate the use of the metronome when tutees performed solo sight-reading exercises, and to provide positive feedback when continuity prevailed in spite of errors. Furthermore, tutors and

tutees performed two sight-reading duets every week. Like the tutees, the tutors may have benefited from the experience of sight-reading duets with another person.

Aside from duets serving as a continuity tool, it seems that sight-reading duets may have been fun and motivational for many peer pairs. Several tutees made comments about the duets in their responses on the addendums to the attitudinal questionnaire. For example, one tutee wrote that the most valuable part of the peer teaching experience was: “Participating in playing duets with my tutor. I thought the duets took a lot of the pressure off sight-reading and they were fun to play.” Another tutee wrote, “My partner and I are still playing duets together outside of this process. It gives me better skills as I pursue this and play with her” (Appendix P). Furthermore, a tutor made the following suggestion about the peer teaching process: “Perhaps have a duet repertoire piece given to each pair at the beginning and work at it until the last session when it can be played together. That way you have sight-reading and repertoire development practice (plus more complex duets are fun!)” (Appendix Q).

These data offer several implications for group piano teaching. Group piano instructors may want to consider implementing duet or ensemble sight-reading as part of regular class instruction. While group piano texts typically include a few duets or ensemble pieces, they often pertain to functional keyboard skills such as repertoire or harmonization and are not often level appropriate for sight-reading. Instructors may want to include supplementary duet and ensemble sight-reading materials in the group piano course in conjunction with pairing students into sight-reading dyads. Instructors may even consider assessing students’ sight-reading skills for exams in their sight-reading dyads. Perhaps this would motivate students to practice sight-reading more frequently outside of class.

Attitudinal analyses concluded that no other items showed significant changes or even approached significance aside from the aforementioned questionnaire items. Initially, this seemed unexpected, especially for questionnaire items 3, 4, and 5, as these three items addressed the importance of sight-reading. Upon examining responses to these items in more detail, it seemed as if participants may have had a strong, positive, attitude toward the importance of sight-reading at the time of the pretest. Consider questionnaire item three: “I feel like sight-reading is an important skill.” Participants were asked to circle a Likert scale number from “1” (very important) to “7” (not at all important) in response to this statement. In Group Piano IV, 33 of the 46 participants circled a “1” or “2” during the pretest while 31 of the 46 participants circled a “1” or “2” during the posttest. In Group Piano II, 33 of the 39 participants circled a “1” or “2” during the pretest and 33 of the 39 participants circled a “1” or “2” during the posttest. It was interesting to find that responses were, as a whole, positive toward the importance of sight-reading at the pretest. It was nearly impossible, then, for participants’ responses to become significantly more positive after participating in peer teaching sessions or independent sight-reading sessions when responding to the same questionnaire item during the posttest.

Research suggests that many students are influenced more by their peers than their teachers (Netherland, 1975), and that peers can affect one another in the classroom (Fisher, 2006; Goliger, 1995). It seems that peer influence may have played a role in this study as well. Some of the open-ended responses suggested that the experimental group participants, tutees and tutors, cared about what their partner thought of their sight-reading abilities. Responses to the question, “The most difficult or frustrating part of this experience was:” included comments such as “not playing well in front of my tutor,” “when I would mess up and my partner would be doing very well,” “she sight-read her material better than I did mine sometimes,” and “not being a good



enough pianist to show my partner how it's done" (Appendix P; Appendix Q). If the act of performing for a peer can motivate one to desire to perform well, perhaps group piano instructors should create more opportunities for peer performances to occur during class. In lieu of having students perform homework assignments for the instructor over headsets, students could be paired with one another during class to perform assignments for their peers. Additionally, peers could play a role in formal assessments where portions of exams could be performed aloud in front of the rest of the class.

Overall, students seemed to enjoy the peer teaching experience. Many participants wrote positive comments such as "It was fun," "I had a fantastic time with peer sight-reading," "I very much enjoyed this," and "I wish we could have been doing this in previous group piano classes." Negative comments surfaced as well, but these were few in comparison. One participant wrote "I did not feel like this benefited me or my partner. Neither of us responded well to this method of sight-reading," and another commented "I'll never do it again" (Appendix P; Appendix Q). Studies have reported that peer teaching yields positive attitudinal student responses (Butler, 2001; Colwell, 1995; Fisher, 2006; Paul, 1998), and the present study seems to support these findings.

### Reflections on Time Usage

#### Pre-test and Posttest Preparatory Behaviors

Recall that once participants were handed the music to the eight-measure sight-reading exercise during the pretest and posttest, they then had two minutes with the piano lid closed in which to view the score and mentally prepare to play the music on the piano. Because two minutes was a relatively short period of time, participants had to prioritize the way they spent their preparatory time. On average, participants in all groups and levels spent the majority of

their preparatory time finger shadowing. (It should be noted that Group Piano IV participants in the experimental group spent nearly the same percentage of the two minutes writing as they did finger shadowing.) It is interesting to note that finger shadowing most closely approximates the task of sight-reading at the piano more than any other overt behavior. It seems reasonable, then, that this activity was the most popular among the participants during the two minutes of preparatory time.

Overall, Group Piano IV participants spent more preparatory time writing on the score than Group Piano II participants. It is likely that the Group Piano IV participants spent more preparatory time writing because their sight-reading exercise was more difficult than the exercise for participants in Group Piano II. The Group Piano IV exercise had more sharps in the key signature, more position shifts, more accidentals, and more harmonic changes than the Group Piano II exercise. Therefore, the Group Piano IV participants had more areas of the score that they could identify or mark with a pencil than the Group Piano II participants.

The participants spent little to no time singing during sight-reading preparation. While all percentages were very low for singing, the Group Piano II participants still sang, on average, twice as much as the Group Piano IV participants. Perhaps this finding was due to a higher enrollment in theory and ear training courses among Group Piano II participants; it is possible that sight-singing transferred over from that course to this exercise. It is also possible that more vocal majors were enrolled in Group Piano II than in Group Piano IV, however, these data were not collected for control or analysis in the present study.

It is worthy to note that the experimental group participants in both levels used the metronome less when preparing to play posttests than pretests in spite of the fact that these participants used the metronome in every peer teaching session across the semester. It seems that

when participants were left to their own devices and limited to two minutes of preparatory time, using the metronome was not as much of a priority as other preparatory behaviors.

Based on the way participants were taught to prepare to sight-read in group piano class, percentages reported for time spent tapping were unexpected. Tapping the rhythm before sight-reading was a preparatory activity that was practiced and emphasized in all group piano classes across the semester. Despite the consistency with which participants tapped dual-staved sight-reading exercises during class prior to performing them, tapping did not appear to be a preparatory technique that participants valued enough to utilize when limited to two minutes of sight-reading preparation. Perhaps students chose to spend the majority of their preparatory time finger shadowing rather than tapping because it was the behavior that most closely resembled sight-reading at the piano.

As I watched the preparatory behaviors of the participants before they sight-read for the pretest and posttest, I noticed several trends connecting preparation and sight-reading ability. First, participants rarely sight-read well if they spent the entire two minute period writing on or staring at the score. Second, I could generally predict a poor sight-reading performance when a participant never turned on the metronome to get a feel for the tempo during the two minutes of preparation. Third, participants who divided their time between finger shadowing, writing, and using the metronome seemed to be the stronger sight-readers. While the purpose of this study was not to analyze the correlation between preparatory behaviors and sight-reading achievement, the participants' behavior prior to sight-reading was intriguing. This topic may warrant further investigation as the results could offer numerous implications for sight-reading instruction in the group piano classroom.

### Peer Teaching Sessions

Recall that each of the 23 peer pairs completed eight peer teaching sessions. SCRIBE© was used to time and document student behaviors utilizing three categories: (1) Playing the Piano, (2) Peer Teaching, and (3) Other. I found that on average, peer teaching sessions constituted 56% peer teaching, 30% piano playing, and 14% other. Considering that the average peer teaching session lasted around 20 minutes, piano playing occurred for only six minutes (30%) of each session. If this study is replicated in the future, I would suggest increasing the number of sight-reading exercises per week as well as revising the steps in the task analyses to ensure that the amount of time participants are actively involved in practicing the skill of sight-reading during peer teaching sessions exceeds the amount of time participants spend talking.

Figure 18 displays the length of time it took dyads to complete peer teaching sessions for each week of tutoring. While the majority of the peer pairs hovered around the 20 minute mark each week, I was interested to find such variance in session length among a few of the pairs. In the second week, for example, one pair completed the peer teaching session in only 10 minutes while it took another pair as long as 32 minutes. Because all sessions were videotaped, I observed several reasons for such variance. The pair that completed the first peer teaching session in 10 minutes also happened to be the same pair that completed the second session in 10 minutes. The tutor in this pair seemed extremely nervous about peer teaching and spoke rather quickly during the first two weeks. Additionally, instead of asking questions about the sight-reading material that were included in the task analysis and letting the tutee respond, the tutor often asked as well as answered the questions, leaving little or no time for the tutee to answer. The lack of conversation between tutor and tutee during the first two weeks likely played a role in such short sessions. This particular pair, however, made great strides by the third session; the

tutor was not nearly as nervous and conversation between tutor and tutee about the sight-reading material vastly increased.

Note that the minimum session length for the seventh week was 10 minutes and the minimum session length for the eighth week was 11 minutes. The same pair had the minimum session length for both of these weeks. Both the tutor and tutee in this dyad were extremely proficient sight-readers. In fact, the sight-reading performances by this pair were nearly flawless during the final two weeks of peer teaching. Therefore, discussion concerning parts of the music that proved difficult or strategies that could prevent errors was minimal and unnecessary, causing shorter sessions.

The majority of the longest peer teaching sessions were shared by two peer pairs. The tutee in one of these pairs struggled with sight-reading and was noticeably weaker in the skill compared to fellow classmates. The sessions with this particular tutor and tutee were so lengthy because ample time was spent learning to tap rhythm hands together (tapping the treble staff with the right hand and the bass staff with the left hand), identifying patterns in the score, discussing sight-reading strategies, and learning to move forward despite errors. The tutee's slow piano playing and a few lengthy, yet encouraging lectures from the tutor, also contributed to time spent. The other pair that had several of the longest peer teaching sessions had a tutor that talked in great detail about the sight-reading process. This tutor addressed nearly every position shift, harmonic change, fingering, or potential problem area in the sight-reading examples for each session. At times, this pair had some very lengthy discussions and therefore, their peer teaching sessions lasted longer than the average pair.

## Reflections on Participants' Sight-Reading Performances

Participants in Group Piano II and Group Piano IV sight-read level appropriate pieces for the pretest and posttest to account for varying ability levels. While the pieces were different, both were eight-measures in length, and “160” was the maximum number of points a participant could score on their pretest and posttest sight-reading performances. Participants were only compared to others within their level (those performing the same sight-reading exercise) regarding sight-reading achievement. Despite this fact, it was still noticeable how much higher overall scores were for Group Piano II participants (pretest scores,  $M = 117.51$ ; posttest scores,  $M = 135$ ) than for Group Piano IV participants (pretest scores,  $M = 102$ ; posttest scores,  $M = 113.76$ ). Despite its level-appropriateness, the sight-reading exercise for Group Piano IV seemed rather difficult for the Group Piano IV participants. Many participants completely dropped the right or left hand while sight-reading during the pretest. More specifically, many Group Piano IV participants dropped one of their hands during the fourth measure of the exercise. While fewer participants dropped a hand during the posttest, it remained a difficult sight-reading exercise for many participants. Certainly, it was necessary for the Group Piano IV exercise to be harder than the Group Piano II exercise (which it was), but the fact that the mean score for Group Piano IV participants at the time of the posttest was nearly 114 was unexpected. Put another way, participants were sight-reading with only 70% accuracy at the time of the posttest, which means that multiple errors were still being made.

Recall that after the pilot study on the sight-reading exercises was conducted, the performance tempo for the Group Piano IV exercise was modified. Considering that the tempo was decreased, and that a panel of experts determined the exercise to be level-appropriate, it is difficult to pinpoint the cause for the overall poor sight-reading performances by Group Piano IV

participants. It is conceivable that the Group Piano IV participants were an overall weak group of sight-readers. Or, it is possible that the sight-reading exercise for the pretest and posttest was just too difficult. Perhaps, though, participants had yet to adjust to the change in sight-reading instruction that occurred at the beginning of the semester.

The method with which the group piano department taught sight-reading changed for all group piano students at the beginning of the 2008 spring semester. For the past three semesters, Group Piano IV students had practiced sight-reading by having approximately seven minutes to play/practice sight-reading exercises at the keyboard before performing them. At the beginning of the spring semester, however, students practiced sight-reading by having a maximum of two minutes to look at the score and mentally prepare before sight-reading the exercise. The students did not have an opportunity to practice any portion of the exercise at the keyboard prior to their performance. Group Piano II participants had only been practicing sight-reading the “old” way for one semester at the beginning of the semester; Group Piano IV participants had been practicing the “old” way for three semesters at the beginning of the semester. It is possible that this “old” method of sight-reading instruction cultivated poor sight-readers. It may have been easier for Group Piano II participants to adapt to the new method of instruction than Group Piano IV participants because they had not been influenced by the “old” method for as long.

While most subjects performed the pretest and posttest sight-reading exercises in the correct register of the piano, many did not. On the pretest, five participants in Group Piano IV played the left hand in the incorrect register – one octave lower than written. One Group Piano IV participant performed the exercise with the left hand two octaves too low and the right hand one octave too low. Another Group Piano IV participant performed the exercise with both hands one octave lower than written, while yet another Group Piano IV participant sight-read with the

left hand two octaves lower than written. On the posttest, only two Group Piano IV participants played the left hand one octave lower than written, and two others played both hands one octave lower than written. All Group Piano II participants performed the pretest in the correct register of the keyboard, but one Group Piano II participant played the left hand one octave too low during the posttest. When subjects sight-read in the incorrect register, whether it was one hand, both hands, one octave too low, or two octaves too low, they did not receive pitch deductions for the octave shifts. If pitch deductions had been counted for each pitch played in the wrong register, participants committing this error would have received deductions for half of the pitches (if displaced by one octave in only one hand) or all of the pitches (if displaced by octaves in both hands), and this would have skewed the results of the study (Hanberry, 2004).

Taking into account that the Group Piano IV participants were music majors in their fourth semester of piano study at the collegiate level, it was unfortunate to discover that many of them made the error of playing one or both hands in the incorrect register of the keyboard when sight-reading. Several factors may have contributed to participants playing in the incorrect register. The participants were accustomed to playing on keyboards in the piano lab, and the pretests and posttests were performed on an acoustic piano. Sitting at an acoustic piano feels different than sitting at a keyboard in a lab because of the placement of the soundboard, the presence of a fallboard, and the height of the instrument. Furthermore, bench size may have played a role in octave displacement. The benches in the keyboard lab were smaller than a regular-sized piano bench. It seems that performing on an acoustic piano with a larger bench may have influenced some of the participants to play in an incorrect register. Additionally, it is possible that some participants did not properly understand the relationship between the notes on the staff and specific registers on the keyboard. Group piano instructors may want to provide



students with numerous opportunities to practice on acoustic pianos as well as keyboards and also review the relationship between the placement of notes on the staff and their corresponding register on the keyboard. Moreover, researchers conducting studies involving group piano participants should take bench size, keyboard size, and student familiarity with the instrument being used, into consideration before the study begins.

Several participants skipped an entire beat when sight-reading the pretest or the posttest. For example, a participant may have played only the first three beats in a measure (pretests and posttests were both in common time), maintained continuity while completely skipping beat four, and moved forward in time to play the downbeat of the following measure. This “skipping of beats” occurred with only one participant in Group Piano IV during the pretest, but it occurred with four Group Piano IV participants during the posttest. Because an entire beat was missing during these participants’ sight-reading performances, they were scored accordingly. Specifically, each of the components (PR, PL, RR, RL, and C) that comprised the five points possible per beat was counted as incorrect. Thus, each beat that was skipped resulted in a deduction of five points. This only pertained to participants in Group Piano IV, as no participant in Group Piano II completely left out a beat on the pretest or posttest.

The note values that comprised sight-reading pretest and posttest exercises were basic; half notes, quarter notes, and eighth notes were the only note values used in the exercises. In the Group Piano II sight-reading exercise, there were eighth notes in measures 2, 4, and 6 in the treble staff. During the pretest, three Group Piano II participants played every eighth note as a quarter note. Likewise, three Group Piano II participants played every eighth note as a quarter note during the posttest. Put another way, participants adjusted the tempo when eighth notes were present. All participants returned to the correct tempo in the third beat of each measure

containing eighth notes. These errors were not scored as continuity errors, but rather, points were deducted rhythmically. Therefore, RR (rhythm in the right hand) and RL (rhythm in the left hand) received no points for the beats when tempo adjustment occurred. Even though the rhythm in the left hand did not have eighth notes while the right hand had eighth notes, all the participants who made this error held the left hand half notes too long as a result of holding the right hand eighth notes twice as long as they should have been played.

### Reflections on the Method

Criterion for scoring sight-reading pretests and posttests was described in Chapter 2. If a similar process were to be utilized in future research, a change regarding the calculation of continuity (C) is suggested. Recall from Chapter 2 that continuity errors could occur in several ways, one of which is stated as follows: A performer received a continuity error if a hesitation of more than  $\frac{3}{4}$  beat occurred at any point in the performance. There was no penalty, though, for the length of time that a performer paused or hesitated. For example, a performer who hesitated for one beat before continuing forward received the same continuity deduction (one point) as a performer who hesitated for five beats. The decision to score continuity this way was based on the criterion used to score continuity for the Watkins-Farnum Performance Scale for Instrumentalists (Watkins & Farnum, 1962). Moreover, participants in the pilot study rarely hesitated longer than one beat.

In the future, I would suggest devising a scoring process that not only penalizes participants for committing errors in continuity, but also penalizes participants for the length of their hesitations. Continuity plays a vital role in any music performance, and from a listener's perspective, an unintended pause in the music disrupts the flow of a phrase or piece. The longer the hesitation lasts, the greater the disruption. From a performer's perspective, a disruption in

continuity can result in a poor performance. Consider the skill of piano accompanying. If an accompanist hesitates any longer than the smallest fraction of a beat, the soloist will be further ahead in the music than the pianist. Future research involving the evaluation of performances should consider employing additional criteria for scoring continuity so that a greater penalty will be the consequence for a longer break in continuity.

When structuring the design of the study, the decision to use the same sight-reading exercise for the posttest as the pretest was made in order to have maximum control in pretest and posttest comparisons. Because sight-reading has been defined as “the performing of a piece of music on seeing it for the first time” (Randel, 2003, p. 780), it was a concern that using the same exercise for the posttest would not be considered sight-reading in the true sense of its definition. However, using a different sight-reading exercise for the posttest than the pretest would not have allowed for control when comparing pretests and posttests. It was fortunate and interesting to note, then, that at the time of the posttest only four (4.7%) of the 85 participants responded “yes” to having seen or played the sight-reading exercise (Table 9). The fact that the majority of the participants in this study did not recognize the sight-reading pretest by the time of the posttest seems like it would be helpful information to researchers involved in future sight-reading studies. However, twelve weeks (Table 1) separated the pretests from the posttests in the present study. Researchers intending to conduct posttests on the next day or in the next week after pretests may not benefit from this finding as much as researchers who plan to implement a longer period of duration between pretests and posttests.

Research has shown that the coordination of peer teaching activities can consume a significant amount of time and can be difficult to organize and schedule if they occur outside of regular scheduled classes (Fisher, 2006). Furthermore, studies have discussed that implementing

peer teaching into the curriculum requires much effort from the teacher (Kassner, 2002). After planning and coordinating peer teaching sessions over the course of the semester, the above claims held true. Peer teaching did occur outside of class, and scheduling, keeping track of, and organizing peer teaching sessions proved chaotic at times. In fact, difficulty in scheduling was mentioned by eight participants in the open-ended addendums. Furthermore, four participants mentioned the frustration that accompanied meeting outside of class, as it took extra time from their already busy schedules. Careful consideration should be given to the structure and implementation of the peer teaching process so that it is designed to be a successful experience for all those involved.

As the semester progressed, the following procedures were helpful in making sure daily peer teaching activities ran smoothly. At different points throughout the semester, the following tasks gradually transformed into a daily checklist to make sure that: (1) the peer teaching room was unlocked, (2) a metronome, stopwatch, and pencil were by the piano, (3) the weekly schedule was taped to the outside of the door to the peer teaching room and the group piano lab, (4) the binder containing the sight-reading materials for that particular week was on the piano, (5) plenty of blank DVD's were available, and (6) the DVD camcorder was plugged in, turned on, and working properly. Additionally, it was helpful to keep both the master weekly peer teaching schedule as well as the names, email addresses, and phone numbers of all 23 peer pairs readily available at all times. That way, when a student needed to confirm a time, reschedule a peer session, or request their partner's contact information, the request was usually simple and quick to take care of because pertinent information was at hand.

While the amount of time and effort to coordinate peer teaching outside of regular classes was challenging at times, there were also pros to the process. I was able to glean a substantial

amount of information from watching the videotaped peer teaching sessions each week. I knew the students who were struggling with sight-reading as well as the students who were proficient at sight-reading. I listened to the questions tutees asked the tutors as well as the responses the tutors gave the tutees. These observations provided me with valuable information because it showed what instructional information the tutors took from class, used themselves, and considered important enough to share with their tutee. Any opportunity to observe students as they teach or perform functional keyboard skills outside of group piano is suggested to group piano instructors as it allows an instructor to know students' abilities in an extraordinarily in-depth fashion.

#### Grades and Attendance

It has been suggested that students who are involved in some form of cooperative learning within a course typically receive higher overall semester grades than students who have not had cooperative learning experiences (Goliger, 1995). Of the 23 participants in the Group Piano IV experimental group, overall semester grades were 19 "A's" and four "B's." Of the 23 participants in the Group Piano IV control group, overall semester grades were nine "A's," nine "B's," four "C's," and one "D." Of the 23 participants in the Group Piano II experimental group, overall semester grades were 20 "A's," and three "B's," while of the 16 participants in the Group Piano II control group, overall semester grades were eight "A's," six "B's," and two "C's." No claims can be made that participants in the experimental group made overall higher semester grades than students in the control group because of involvement in peer teaching. Also, it is necessary to consider that instructor bias could have played a role grade distribution for participants in Group Piano IV because the same instructor taught all participants enrolled in Group Piano IV. This was not the case for Group Piano II participants, however, since three

different instructors taught these participants. Nevertheless, this information leads one to ponder whether higher semester grades may be a possible result of implementing peer teaching as part of a group piano course.

Goliger (1995) reported that students involved in a cooperative learning program had fewer issues with absences, tardiness, and warning notices when compared to students that were not involved in the program. Only three participants in the Group Piano IV experimental group missed more than three classes across the semester. Of the Group Piano IV participants in the control group, however, nine participants missed more than three classes. In Group Piano II, only one participant in the experimental group missed more than three classes across the semester. In the Group Piano II control group, though, five participants missed more than three classes. Again, no claims can be made that involvement in peer teaching encouraged students in the experimental group to have better attendance than students in the control group. It is also necessary to consider that the results of this study may have been influenced by the fact that participants in the experimental group were in class more often and therefore received more instruction than students in the control group. Group piano instructors, however, should note that improved attendance records may be a possible result of implementing peer teaching as part of a group piano course.

Along the lines of class attendance, participants in the experimental group also had higher attendance than participants in the control group concerning out-of-class sight-reading requirements (independent sight-reading in the piano lab for the control group and peer teaching sessions for the experimental group). Participants in the experimental group completed every peer teaching session; all (100%) of the sessions were completed. While participants in the control group completed a high percentage of the independent sight-reading sessions (95%), not

every session was completed, and 5% of the independent sight-reading sessions remained incomplete at the end of the semester. Peer pairs may have felt more obligated to attend weekly sessions because someone else's grade depended on their presence. Perhaps some participants felt it was more enjoyable to practice a skill with a partner than to practice alone. As the instructor of the Group Piano IV experimental group piano classes, I even noticed a camaraderie developing among classmates throughout the semester as they used the downtime before and after group piano classes to discuss how their peer teaching sessions were going. Whatever the incentive for a 100% attendance record for the tutors and tutees, group piano instructors should consider that attendance for course requirements completed outside of class may be higher if students are held accountable to one another by being paired or grouped together.

#### Summary and Implications for Future Research

In an attempt to further increase the knowledge that is available concerning effective instructional methods in the group piano setting, this study sought to isolate the method of peer teaching to determine its effects on student achievement and attitude toward keyboard sight-reading. Concerning achievement, this study offers empirical evidence to support the idea that peer teaching may positively affect peer tutors' achievement in sight-reading at the piano. Concerning attitude, this study offers empirical evidence to support the idea that peer teaching may help to increase peer tutees' confidence in maintaining continuity while sight-reading at the piano.

The results of this study provide evidence that peer teaching may be an effective method of instruction in the group piano setting. Perhaps these findings will encourage group piano instructors to implement peer teaching into the group piano setting. Perhaps group piano

instructors will consider providing as many opportunities as possible for students to take on the role of “teacher,” as this responsibility benefited peer tutors in the present study.

At many schools of music, undergraduate music majors are required to take anywhere from two to six semesters of group piano study. Providing the best possible instruction to students while they are enrolled in group piano should be of utmost importance to group piano instructors so that students may obtain the highest level of keyboard proficiency possible. The body of literature that currently provides the group piano pedagogue with effective, empirically based methods of instruction continues to grow as studies are being conducted and published. This body of literature is still small, however, and many questions remain.

If peer teaching positively affects the sight-reading achievement of tutors, would it similarly affect achievement in other functional keyboard skills such as harmonization, accompanying, and open score? Would peer teaching continue to be as effective if it occurred during group piano class instead of taking place outside of class? Would peer teaching be an effective method of instruction in group piano if tutors and tutees were in the same level of study? Would peer teaching be effective if it occurred twice a week, lasted longer, or extended to more than eight peer teaching sessions? Would students benefit more from teaching in groups of three or more or from teaching in dyads as in the present study? Other aspects to consider include the effects peer teaching has on students’ grades, students’ attendance, and at what point during the group piano sequence peer teaching is most effective.



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# APPENDIX A

## IRB EXEMPTION AND CONSENT FORM

### Application for Exemption from Institutional Oversight

Unless qualified as meeting the specific criteria for exemption from Institutional Review Board (IRB) oversight, ALL LSU research/projects using living humans as subjects, or samples or data obtained from humans, directly or indirectly, with or without their consent, must be approved or exempted in advance by the LSU IRB. This Form helps the PI determine if a project may be exempted, and is used to request an exemption.



Institutional Review Board  
Dr. Robert Mathews, Chair  
203 B-1 David Boyd Hall  
Baton Rouge, LA 70803  
P: 225.578.8692  
F: 225.578.6792  
irb@lsu.edu | lsu.edu/irb

- Applicant, Please fill out the application in its entirety and include the completed application as well as parts A-E, listed below, when submitting to the IRB. Once the application is completed, please submit two copies of the completed application to the IRB Office or to a member of the Human Subjects Screening Committee. Members of this committee can be found at [http://appl003.lsu.edu/osp/osp.nsf/\\$Content/Humans+Subject+Committee?OpenDocument](http://appl003.lsu.edu/osp/osp.nsf/$Content/Humans+Subject+Committee?OpenDocument)
- A Complete Application Includes All of the Following:
  - (A) Two copies of this completed form and two copies of parts B thru E.
  - (B) A brief project description (adequate to evaluate risks to subjects and to explain your responses to Parts 1 & 2)
  - (C) Copies of all instruments to be used.
    - If this proposal is part of a grant proposal, include a copy of the proposal and all recruitment material.
  - (D) The consent form that you will use in the study (see part 3 for more information.)
  - (E) Certificate of Completion of Human Subjects Protection Training for all personnel involved in the project, including students who are involved with testing or handling data, unless already on file with the IRB.  
Training link: (<http://cme.cancer.gov/clinicaltrials/learning/humanparticipant-protections.asp>.)

1) Principal Investigator: Nan Baker Rank: PhD student

Dept.: Music Ph: 225-773-2884 E-mail: nbaker1@lsu.edu

2) Co Investigator(s): please include department, rank and e-mail for each  
\* If student, please identify and name supervising professor in this space

3) Project Title: The Effects of Peer Teaching on Undergraduate Music Majors' Achievement on and Attitude Toward Sight-Reading in the Group Piano Setting

4) LSU Proposal?(yes or no) no If Yes, LSU Proposal Number \_\_\_\_\_

Also, if YES, either ☐ This application completely matches the scope of work in the grant  
**OR**  
☐ More IRB Applications will be filed later

5) Subject pool (e.g. Psychology Students) undergraduate music majors  
• Circle any "vulnerable populations" to be used: (children <18; the mentally impaired, pregnant women, the aged, other). Projects with incarcerated persons cannot be exempted.

6) PI Signature Nancy E Baker \*\* Date 12/17/07 (no per signatures)  
\*\*I certify my responses are accurate and complete. If the project scope or design is later changed I will resubmit for review. I will obtain written approval from the Authorized Representative of all non-LSU institutions in which the study is conducted. I also understand that it is my responsibility to maintain copies of all consent forms at LSU for three years after completion of the study. If I leave LSU before that time the consent forms should be preserved in the Departmental Office.

\*\*\*Effective August 1, 2007, all Exemptions will expire three years from date of approval, unless a continuation report, found on our website, is filed prior to expiration date\*\*\*

Screening Committee Action: Exempted ☒ Not Exempted \_\_\_\_\_ Category/Paragraph 2

Reviewer Mathews Signature Robert Mathews Date 1/7/08

Study Exempted By:  
Dr. Robert C. Mathews, Chairman  
Institutional Review Board  
Louisiana State University  
203 B-1 David Boyd Hall  
225-578-8692 | [www.lsu.edu/irb](http://www.lsu.edu/irb)  
Exemption Expires: 1-06-2011

IRB# E3876 LSU Proposal# \_\_\_\_\_  
☒ Complete Application  
☒ Human Subjects Training



## **Consent Form**

|                  |   |
|------------------|---|
| Title            | The Effects of Peer Teaching on Music Majors' Achievement and Attitude Toward Sight-Reading in the Group Piano Setting  |
| Site             | Various classrooms in Hatcher Hall, LSU   |
| Contact          | Nan Baker (principal investigator)<br>11101 Reiger Road, Apt. 1012<br>Baton Rouge, LA 70809<br>nbaker1@lsu.edu<br>225-773-2884  |
| Participants     | Students enrolled in four sections of Group Piano IV (MUS 1133; maximum $n = 48$ ), and students enrolled in four sections of Group Piano II (MUS 1131; maximum $n = 48$ ) will serve as subjects. All students are over 18 years of age.   |
| Purpose of Study | The purposes of this study are twofold. The first will be to investigate the effects of peer teaching on student achievement in sight-reading at the piano. The second will be to determine whether peer teaching positively affects students' attitude toward sight-reading at the piano.  |
| Procedures       | All students will participate in a pretest and posttest that consists of completing an attitudinal survey about sight-reading as well as being videotaped while performing a short sight-reading exercise at the piano. Participants will be assigned to a control or experimental group. Each Group Piano II student in the experimental group will be paired with a Group Piano IV student also in the experimental group. Once a week for a total of eight weeks, each pair will participate in a 30-minute peer teaching session. Each peer teaching session will be videotaped and will involve a student in Group Piano IV instructing a student in Group Piano II in sight-reading exercises at the piano. |
| Benefits         | Any determination that can be made based on data from this project as to the effectiveness of peer teaching sight-reading in the group piano setting will benefit music majors, group piano instructors, and the music education community.   |
| Risks            | None  |
| Right to Refuse  | Participation is voluntary. Those who participate can choose to have any data withheld from the study with no penalty. Regardless of voluntary participation in the study, students enrolled in Group Piano II and Group Piano IV will receive a grade for their participation in peer teaching activities. Participants will be identified in data analysis by coded number so that individuals will remain anonymous. There will be no financial compensation for participating in this study.  |

Consent

This study has been discussed with me and my questions have been answered. I may direct additional questions regarding study specifics to the investigator. If I have questions about participants' rights or other concerns, I may contact Robert C. Matthews, Chairman, LSU Institutional Review Board, 225-578-8692. I agree to participate in the study described above and acknowledge the investigator's obligation to provide me a copy of this consent form if signed by me.

Signature \_\_\_\_\_

Printed Name \_\_\_\_\_

Date \_\_\_\_\_

**Study Exempted By:**  
Dr. Robert C. Matthews, Chairman  
Institutional Review Board  
Louisiana State University  
203 B-1 David Boyd Hall  
225-578-8692 | [www.lsu.edu/irb](http://www.lsu.edu/irb)  
**Exemption Expires:** 1-06-2011

APPENDIX B  
BIBLIOGRAPHY OF SIGHT-READING MATERIALS

Week 1

- Goldston, M. (1994). Love-lei. In *Music for Sharing, Book One* (pp. 6-9). Van Nuys, CA: Alfred Publishing Co., Inc. ISBN 0-7390-0395-3
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- Olson, K. (2006). Double trouble. In H. Marlais (Ed.), *In Recital Duets, Volume One, Book One* (pp. 18-21). Fort Lauderdale, FL: FJH Music Co., Inc. ISBN 1-56939-515-2
- Türk, D. G. (1997). Minuet. In K. Snell (Ed.), *Piano Repertoire: Baroque and Classical, Preparatory Level* (pp. 9). San Diego, CA: Neil A. Kjos Music Co. ISBN 0-8497-6208-1

Week 2

- Goldston, M. (1994). Your turn to rock. In *Music for Sharing, Book One* (pp. 2-5). Van Nuys, CA: Alfred Publishing Co., Inc. ISBN 0-7390-0395-3
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- Kessner, D. (1984). Skater's waltz. In E. Heerema (Ed.), *Progressive Class Piano: A Practical Approach for the Older Beginner, Second Edition* (pp. 32-33). Van Nuys, CA: Alfred Publishing Co., Inc. ISBN 0-88284-297-8
- Mach, E. (2004). Untitled in G Major. In E. Mach (Ed.), *Contemporary Class Piano, Sixth Edition* (pp. 355). New York: Oxford University Press. ISBN 0-19-516688-4
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Week 3

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Strauss, J. (2006). Blue Danube Waltz, Op. 314. In H. Marlais (Ed.), *In Recital Duets, Volume One, Book Two* (pp. 18-21). Arranged by R. Schulz. Fort Lauderdale, FL: FJH Music Co., Inc. ISBN 1-56939-516-0

#### Week 4

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#### Week 5

Carrell, J., & Clayton, D. (2002). Amazing Grace. In D. Alexander (Arr.), *Five-Star Classical Duets: 12 Colorful Elementary to Late Elementary Arrangements of Hymns and Spirituals for One Piano, Four Hands* (pp. 26-27). Van Nuys, CA: Alfred Publishing Co., Inc. ISBN 0-7390-2984-3

Mach, E. (2004). Untitled in C Minor. In E. Mach (Ed.), *Contemporary Class Piano, Sixth Edition* (pp. 389). New York: Oxford University Press. ISBN 0-19-516688-4

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## Week 6

- Marlais, H., & Olson, K. (2005). Untitled in E Major. In *Sight Reading and Rhythm Every Day, Book 2B* (pp. 26). Fort Lauderdale, FL: FJH Music Co., Inc. ISBN 1-56939-542-X
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- Traditional. (2002). Amazing Grace. In D. Alexander (Arr.), *Five-Star Classical Duets: 12 Colorful Elementary to Late Elementary Arrangements of Hymns and Spirituals for One Piano, Four Hands* (pp. 8-9). Van Nuys, CA: Alfred Publishing Co., Inc. ISBN 0-7390-2984-3

## Week 7

- Bizet, G. (2002). March of the Toreadors. In D. Alexander (Arr.), *Five-Star Classical Duets: 13 Colorful Late Elementary Arrangements for One Piano, Four Hands* (pp. 20-21). Van Nuys, CA: Alfred Publishing Co., Inc. ISBN 0-7390-2983-5
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- Reinagle, A. (1997). Minuet. In K. Snell (Ed.), *Piano Repertoire: Baroque and Classical, Preparatory Level* (pp. 11). San Diego, CA: Neil A. Kjos Music Co. ISBN 0-8497-6208-1

## Week 8

- Brown, T. (2006). The Dreamland Tree. In H. Marlais (Ed.), *In Recital Duets, Volume One, Book Two* (pp. 22-25). Fort Lauderdale, FL: FJH Music Co., Inc. ISBN 1-56939-516-0
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APPENDIX C  
TASK ANALYSES FOR PEER TEACHING SESSIONS

**Peer Teaching Sight-Reading  
Week #1: Feb. 11-15**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of *Double Trouble* and *Love-Lei*. You, the tutor, will play the secondo part while your partner, the tutee, plays the primo part.
- **For each duet, lead your student through the following pre-sight-reading steps:**
  1. Have the student identify and state aloud the key and the time signature.
  2. Ask the student to locate any accidentals.
  3. Ask the student to identify at least two patterns in the score. Patterns can include scalar passages, chordal structures, rhythmic repetition, etc. (Prompt the student if necessary!)
  4. Next, ask the tutee to tap the rhythm hands together (RH on right leg for treble clef and LH on left leg for bass clef).

*\*While the student is tapping the primo part, you will simultaneously tap the secondo part.*
  5. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
  6. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
  7. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  8. Follow steps 1-6 and sight-read the next duet.

## **Activity #2: Individual Sight-Reading**

- **For each piece, lead your student through the following pre-sight-reading steps:**
  1. Close the piano lid.
  2. Hand the student *Light and Dark* and then set the stopwatch for two minutes.
  3. Tell the student that in two minutes they will be sight-reading this piece with a metronome (quarter note = 60).
  4. Ask the student to identify the key and the time signature.
  5. Ask the student to identify at least two patterns in the score. Patterns can include scalar passages, chordal structures, rhythmic repetition, etc.
  6. Have the student tap the rhythm hands together.
  7. With the time that is left over (if any) choose from the following list of pre-playing steps:
    - a. Identify and mark the accidentals.
    - b. Ask the student to identify where their hands change positions/move.
    - c. Discuss repetition (harmonic, rhythmic, etc.).
  8. When two minutes have passed, raise the piano lid and turn the metronome on at quarter note = 60.
  9. Reiterate how important it is to keep moving forward even if errors occur.
  10. With the metronome on, ask the student to sight-read this piece.
  11. Assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  12. Repeat the process, this time with *Minuet*. (quarter note = 60 for this piece as well)



**Peer Teaching Sight-Reading**  
**Week #2: Feb. 18-22**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of three duets. You, the teacher, will play the secondo part while your Group Piano II partner plays the primo part.
  - (1) *First Duet*
  - (2) *Skater's Waltz*
  - (3) *Your Turn to Rock*
- **For each duet, lead your student through the following pre-reading steps:**
  1. Have the student identify and state aloud the key and the time signature.
  2. Ask the student to locate black keys and accidentals.
  3. Next, ask the tutee to tap the rhythm hands together (RH on right leg for treble clef and LH on left leg for bass clef).  
*\*While the student is tapping the primo part, you will simultaneously tap the secondo part.*
  4. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
  5. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
  6. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  7. Follow steps 1-6 and sight-read the next duet.

## **Activity #2: Individual Sight-Reading**

- **For each piece, lead your student through the following pre-reading steps:**

Close the piano lid.

1. Hand the student *Untitled* and then set the timer for two minutes.
2. Tell the student that in two minutes they will be sight-reading this piece with a metronome (quarter note = 72).
3. During the two minutes, guide your student through pre-reading (you may not have time everything so you will have to choose what you feel is most important):
  - a. Identify the key signature and time signature.
  - b. Identify and mark the accidentals.
  - c. Set the metronome to quarter note = 72 and tap hands together in order to get a feel for the tempo.
  - d. Ask the student to identify where their hands change positions/move.
  - e. Find patterns (scalar, chordal).
  - f. Discuss repetition.
4. When two minutes have passed, raise the piano lid and turn the metronome on at quarter note = 72.
5. Reiterate how important it is to keep moving forward even if errors occur.
6. With the metronome on, ask the student to sight-read this piece.
7. Assess the performance. You may choose to ask the student the following questions:
  - a. What went well?
  - b. Were you able to maintain continuity despite any errors?
  - c. Were there spots that were difficult? If so, where?
  - d. Why were they difficult?
  - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
8. Repeat the process, this time with *Du, du Liegst Mir Im Herzen*. Set the metronome to quarter note = 72.

**Peer Teaching Sight-Reading**  
**Week #3: Feb. 25-29**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of three duets. You, the teacher, will play the secondo part while your Group Piano II partner plays the primo part.  
(1) *Blue Danube*  
(2) *Steeple Chimes*
- **For each duet, lead your student through the following pre-reading steps:**
  1. Have the student identify and state aloud the key and the time signature.
  2. Ask the student to locate black keys and accidentals.
  3. Next, ask the tutee to tap the rhythm hands together (RH on right leg for treble clef and LH on left leg for bass clef).  
*\*While the student is tapping the primo part, you will simultaneously tap the secondo part.*
  4. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
  5. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
  6. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  7. Follow steps 1-6 and sight-read the next duet.

## **Activity #2: Individual Sight-Reading**

- **For each piece, lead your student through the following pre-reading steps:**
  1. Close the piano lid
  2. Hand the student *Dance Tune* and then set the timer for two minutes.
  3. Tell the student that in two minutes they will be sight-reading this piece with a metronome (quarter note = 65).
  4. During the two minutes, guide your student through pre-reading (you may not have time everything so you will have to choose what you feel is most important):
    - a. Identify the key signature and time signature.
    - b. Identify and mark the accidentals.
    - c. Set the metronome to quarter note = 65 and tap hands together in order to get a feel for the tempo.
    - d. Ask the student to identify where their hands change positions/move.
    - e. Find patterns (scalar, chordal).
    - f. Discuss repetition.
  5. When two minutes have passed, raise the piano lid and turn the metronome on at quarter note = 65.
  6. Reiterate how important it is to keep moving forward even if errors occur.
  7. With the metronome on, ask the student to sight-read this piece.
  8. Assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  9. Repeat the process, this time with *French Folk Song*. Set the metronome to quarter note equals 60.

**Peer Teaching Sight-Reading  
Week #4: March 3-7**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of three duets. You will play the secondo part while your Group Piano II partner plays the primo part.

- (1) *The Merry Widow Waltz*
- (2) *Turkish March*
- (3) *Carnival*

- **For the first duet, *Merry Widow Waltz*, do not spend any time preparing to play mentally. Set up your hands and start!**
- **For *Turkish March* and *Carnival*, lead your student through the following pre-reading steps:**
  1. Have the student identify and state aloud the key and the time signature.
  2. Ask the student to locate black keys and accidentals.
  3. Next, ask the tutee to tap the rhythm while looking for repetition AND patterns (scalar, chordal).
  4. Ask your partner to identify some of the patterns. Also, ask your partner to point out some places where repetition occurs.
  5. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
  6. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
  7. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  8. Follow steps 1-7 and sight-read the next duet.

## **Activity #2: Individual Sight-Reading**

- **For each piece, lead your student through the following pre-reading steps:**

1. Close the piano lid.
2. Set the timer for **ONE minute** (pieces are shorter this week).
3. Tell the student that in one minute they will be sight-reading this piece with a metronome marking of:

Piece #1: Eighth note = 70

Piece #2: Quarter note = 70

Piece #3: Quarter note = 70

4. During the one minutes, guide your student through pre-reading:
  - a. Identify the key signature and time signature.
  - b. Tap the rhythm.
  - c. Analyze the LH harmony (I, IV, V7).
  - d. Ask the student to identify where their hands change positions/move.
  - e. Find patterns (scalar, chordal).
  - f. Discuss repetition.
5. When the minute has passed, raise the piano lid and turn the metronome on.
6. Reiterate how important it is to keep moving forward even if errors occur.
7. With the metronome on, ask the student to sight-read this piece.
8. Assess the performance. You may choose to ask the student the following questions:
  - a. What went well?
  - b. Were you able to maintain continuity despite any errors?
  - c. Were there spots that were difficult? If so, where?
  - d. Why were they difficult?
  - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
9. Repeat the process with each of the three short pieces.

**Peer Teaching Sight-Reading**  
**Week #5: March 10-14**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of two duets. You will play the secondo part while your Group Piano II partner plays the primo part.

(1) *Amazing Grace*  
(2) *Romance*

- **For *Amazing Grace* and *Romance*, lead your student through the following pre-reading steps:**
  1. Have the student identify and state aloud the key and the time signature.
  2. Next, ask the tutee to tap the rhythm while looking for repetition AND patterns (scalar, chordal).
  3. Ask your partner to identify some of the patterns. Also, ask your partner to point out some places where repetition occurs.
  4. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
  5. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
  6. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  7. Follow steps 1-7 and sight-read the next duet.

## **Activity #2: Individual Sight-Reading**

- **For each piece, lead your student through the following pre-reading steps:**
  1. Close the piano lid.
  2. Give your student as much time (or as little time) as you feel he/she needs to prepare, but no more than two minutes.
  3. During the pre-sight-reading, guide your student through the following:
    - a. Identify the key signature and time signature.
    - b. Tap the rhythm.
    - c. Analyze the LH harmony (I, IV, V7).
    - d. Ask the student to identify where their hands change positions/move.
    - e. Find patterns (scalar, chordal).
    - f. Discuss repetition.
  4. Raise the piano lid and turn the metronome on.
  5. You choose the tempo for each piece for your partner.
  6. Reiterate how important it is to keep moving forward even if errors occur.
  7. With the metronome on, ask the student to sight-read this piece.
  8. Assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  9. Repeat the process with each of the three short pieces.



**Peer Teaching Sight-Reading**  
**Week #6: March 24-28**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of two duets. You will play the secondo part while your Group Piano II partner plays the primo part.

(1) *Do Lord*

(2) *Laughing Song*

- **For *Do Lord* and *Laughing Song*, lead your student through the following pre-reading steps:**

1. Have the student identify and state aloud the key and the time signature.
2. Next, ask the tutee to tap the rhythm while looking for repetition AND patterns (scalar, chordal).
3. Ask your partner to identify some of the patterns. Also, ask your partner to point out some places where repetition occurs.
4. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
5. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
6. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
  - a. What went well?
  - b. Were you able to maintain continuity despite any errors?
  - c. Were there spots that were difficult? If so, where?
  - d. Why were they difficult?
  - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
7. Follow steps 1-7 and sight-read the next duet.

## **Activity #2: Individual Sight-Reading**

- **There are 3 short pieces this week.**

1. Close the piano lid.
2. Give your student as much time (or as little time) as you feel he/she needs to prepare, but no more than two minutes.
3. During the pre-sight-reading, guide your student through the following:
  - a. Identify the key signature and time signature.
  - b. Tap the rhythm.
  - c. Analyze the harmony (I, IV, V7).
  - d. Ask the student to identify where their hands change positions/move.
  - e. Find patterns (scalar, chordal).
  - f. Discuss repetition.
4. Raise the piano lid and turn the metronome on.
5. **Metronome markings are:**
  - a. **Foreign Accents: quarter note = 70**
  - b. **Piece #2: quarter note = 70**
  - c. **Piece #3: quarter note = 60**
6. Reiterate how important it is to keep moving forward even if errors occur.
7. With the metronome on, ask the student to sight-read this piece.
8. Assess the performance. You may choose to ask the student the following questions:
  - a. What went well?
  - b. Were you able to maintain continuity despite any errors?
  - c. Were there spots that were difficult? If so, where?
  - d. Why were they difficult?
  - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
9. Repeat the process with each of the three short pieces.

**Peer Teaching Sight-Reading**  
**Week #7: April 7-11**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of two duets. You will play the secondo part while your Group Piano II partner plays the primo part.

(1) *Roller Coaster Ride*

(2) *March of the Toreadors*

- For ***Roller Coaster Ride***, do a quick 30 second pre-reading scan with your partner covering:
  - (1) key and time signature
  - (2) hand position/position shifts (hands stay in Sharing C for both parts!)
  - (3) possibly some brief tapping
- Then, go ahead and play!
  - Play this duet a second time. Ask your partner to choose the quickest tempo he/she can play accurately – so encourage a quicker tempo than the first attempt!
- For ***March of the Toreadors***, lead your student through the following pre-reading steps:
  1. Have the student identify and state aloud the key and the time signature.
  2. Next, ask the tutee to tap the rhythm while looking for repetition AND patterns (scalar, chordal).
  3. Ask your partner to identify some of the patterns. Also, ask your partner to point out some places where repetition occurs.
  4. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
  5. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
  6. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?

## **Activity #2: Individual Sight-Reading**

- **There are 2 pieces this week.**

1. Close the piano lid.
2. Give your student as much time (or as little time) as you feel he/she needs to prepare, but no more than two minutes.
3. During the pre-sight-reading, guide your student through the following:
  - a. Identify the key signature and time signature.
  - b. Tap the rhythm.
  - c. Analyze the harmony (I, IV, V7).
  - d. Ask the student to identify where their hands change positions/move.
  - e. Find patterns (scalar, chordal).
  - f. Discuss repetition.
4. Raise the piano lid and turn the metronome on.
5. Metronome markings are:
  - a. **Piece #1: quarter note = 65**
  - b. **Piece #2: quarter note = 70**
6. Reiterate how important it is to keep moving forward even if errors occur.
7. With the metronome on, ask the student to sight-read this piece.
8. Assess the performance. You may choose to ask the student the following questions:
  - a. What went well?
  - b. Were you able to maintain continuity despite any errors?
  - c. Were there spots that were difficult? If so, where?
  - d. Why were they difficult?
  - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
9. Repeat the process with the next piece.

**Peer Teaching Sight-Reading**  
**Week #8: April 14-18**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of two duets. You will play the secondo part while your Group Piano II partner plays the primo part.

**(1) *The Dreamland Tree***

**(2) *In the Hall of the Mountain King***

- For *The Dreamland Tree*, do a quick 30 second pre-reading scan with your partner covering:
  - (1) key and time signature
  - (2) hand position/position shifts
  - (3) possibly some brief tapping
- Then, go ahead and play!
  - Play this duet a second time. Ask your partner to choose the quickest tempo he/she can play accurately – so encourage a quicker tempo than the first attempt!
- For *In the Hall of the Mountain King*, lead your student through the following pre-reading steps:
  1. Have the student identify and state aloud the key and the time signature.
  2. Next, ask the tutee to tap the rhythm while looking for repetition AND patterns (scalar, chordal).
  3. Ask your partner to identify some of the patterns. Also, ask your partner to point out some places where repetition occurs.
  4. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
  5. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
  6. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where? Why were they hard?
    - d. What strategies could you employ in the future to prevent or correct the difficulties that you had?

## **Activity #2: Individual Sight-Reading**

- **There are 2 pieces this week. Both are in the key of D Minor.**
- 1. Give your student as much time (or as little time) as you feel he/she needs to prepare, but no more than two minutes.
- 2. During the pre-sight-reading, guide your student through the following:
  - a. Identify the key signature and time signature.
  - b. Tap the rhythm.
  - c. Analyze the harmony (I, IV, V7).
  - d. Ask the student to identify where their hands change positions/move.
  - e. Find patterns (scalar, chordal).
  - f. Discuss repetition.
- 3. Turn the metronome on.
- 4. Metronome markings are:
  - a. **Piece #1, *My White Horse*: quarter note = 70**
  - b. **Piece #2, *Volga Boatman*: quarter note = 65**
- 5. Reiterate how important it is to keep moving forward even if errors occur.
- 6. With the metronome on, ask the student to sight-read this piece.
- 7. Assess the performance. You may choose to ask the student the following questions:
  - a. What went well?
  - b. Were you able to maintain continuity despite any errors?
  - c. Were there spots that were difficult? If so, where?
  - d. Why were they difficult?
  - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
- 8. Repeat the process with the other piece.

APPENDIX D  
EXAMPLE OF A WEEKLY PEER TEACHING PACKET

**Materials for Week #1**

**Activity #1: Sight-Reading Duets**

- Attached to this handout are the primo part and the secondo part of *Double Trouble* and *Love-Lei*. You, the tutor, will play the secondo part while your partner, the tutee, plays the primo part.
- **For each duet, lead your student through the following pre-sight-reading steps:**
  1. Have the student identify and state aloud the key and the time signature.
  2. Ask the student to locate any accidentals.
  3. Ask the student to identify at least two patterns in the score. Patterns can include scalar passages, chordal structures, rhythmic repetition, etc. (Prompt the student if necessary!)
  4. Next, ask the tutee to tap the rhythm hands together (RH on right leg for treble clef and LH on left leg for bass clef).

*\*While the student is tapping the primo part, you will simultaneously tap the secondo part.*
  5. Inform the student that you will be sight-reading this piece together. Make sure you both have your hands in the correct registers of the keyboard.
  6. Remind the student that continuity – not stopping or hesitating, and always moving forward – is the most important part of sight-reading.
  7. After you have played the duet in its entirety, assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  8. Follow steps 1-6 and sight-read the next duet.

# Love-Lei

SECONDO

Tenderly

Margaret Goldston

*(RH one octave lower than written throughout)*

mp

*(LH as written)*

1 2

5 4

The first system of the piano score for 'Love-Lei'. It consists of two staves, treble and bass, in 4/4 time. The right hand (RH) plays a melody of eighth notes, starting on G4, with fingerings 1 and 2 indicated. The left hand (LH) plays a bass line of half notes, starting on G2, with fingerings 5 and 4 indicated. The dynamic marking 'mp' is present. A note in the LH is marked with an asterisk (\*).

5

The second system of the piano score, measures 5 through 8. The RH continues the melody with eighth notes and a slur. The LH continues the bass line with half notes and a slur.

9

The third system of the piano score, measures 9 through 12. The RH continues the melody with eighth notes and a slur. The LH continues the bass line with half notes and a slur.

13

2

The fourth system of the piano score, measures 13 through 16. The RH continues the melody with eighth notes and a slur. The LH continues the bass line with half notes and a slur. A finger number '2' is written below the first note of the LH.

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# Love-Lei

PRIMO

Margaret Goldston

**Tenderly**

*(RH one octave higher than written throughout)*

Measures 1-4 of the piece. The right hand (RH) is in treble clef, 4/4 time, with a mezzo-piano (*mp*) dynamic. It features a triplet of eighth notes in measure 1, followed by eighth notes in measures 2 and 3, and a quarter note in measure 4. The left hand (LH) is in bass clef, 4/4 time, with a mezzo-forte (*mf*) dynamic. It starts with a half note in measure 1, followed by quarter notes in measures 2 and 3, and a half note in measure 4. Fingering numbers 3, 4, 5, and 2 are indicated for the RH and LH respectively.

Measures 5-8 of the piece. The right hand (RH) is in treble clef, 4/4 time, with a mezzo-forte (*mf*) dynamic. It has whole rests in measures 5, 6, 7, and 8. The left hand (LH) is in bass clef, 4/4 time, with a mezzo-forte (*mf*) dynamic. It features a half note in measure 5, followed by quarter notes in measures 6 and 7, and a half note in measure 8.

Measures 9-12 of the piece. The right hand (RH) is in treble clef, 4/4 time, with a mezzo-forte (*mf*) dynamic. It has whole rests in measures 9, 10, 11, and 12. The left hand (LH) is in bass clef, 4/4 time, with a mezzo-forte (*mf*) dynamic. It features a half note in measure 9, followed by quarter notes in measures 10 and 11, and a half note in measure 12.

Measures 13-16 of the piece. The right hand (RH) is in treble clef, 4/4 time, with a mezzo-forte (*mf*) dynamic. It has whole rests in measures 13, 14, 15, and 16. The left hand (LH) is in bass clef, 4/4 time, with a mezzo-forte (*mf*) dynamic. It features a half note in measure 13, followed by quarter notes in measures 14 and 15, and a half note in measure 16.

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o

SECONDO

17 *mf*

21

25 *p* *mp* *mf*

30 *mp* *mf rit.*

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PRIMO

17

*f*

2 3

2 5

21

*mp*

25

*mf*

*f*

30

*mp*

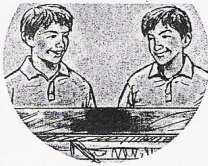
*f*

*rit.*

*(mp)*

1 2 3 4 5

1 (1) 2



# DOUBLE TROUBLE

## Secondo

Kevin Olson

With energy (♩ = 100 or faster)

Play both hands one octave  
lower throughout

First system of music (measures 1-4). Treble clef has a melodic line starting on G4, moving up stepwise to D5, then down. Bass clef has a supporting line starting on G2, moving up stepwise to D3, then down. Dynamics include *f* (forte) and fingerings 1, 3, 5 are indicated.

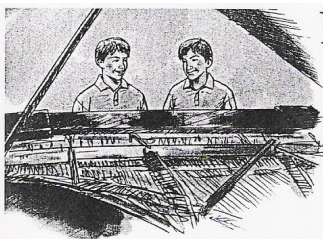
Second system of music (measures 5-8). Continuation of the melodic and supporting lines from the first system.

Third system of music (measures 9-12). Treble clef has a melodic line starting on G4, moving up stepwise to D5, then down. Bass clef has a supporting line starting on G2, moving up stepwise to D3, then down. Dynamics include *p* (piano) and fingerings 3, 2 are indicated.

Fourth system of music (measures 13-16). Continuation of the melodic and supporting lines from the third system. Dynamics include *f* (forte) and fingering 3 is indicated.

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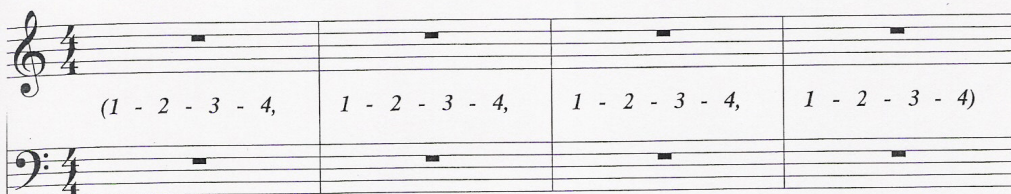


## DOUBLE TROUBLE

Primo

Kevin Olson

With energy (♩ = 100 or faster)



## **Activity #2: Individual Sight-Reading**

- **For each piece, lead your student through the following pre-sight-reading steps:**
  1. Close the piano lid.
  2. Hand the student *Light and Dark* and then set the stopwatch for two minutes.
  3. Tell the student that in two minutes they will be sight-reading this piece with a metronome (quarter note = 60).
  4. Ask the student to identify the key and the time signature.
  5. Ask the student to identify at least two patterns in the score. Patterns can include scalar passages, chordal structures, rhythmic repetition, etc.
  6. Have the student tap the rhythm hands together.
  7. With the time that is left over (if any) choose from the following list of pre-playing steps:
    - a. Identify and mark the accidentals.
    - b. Ask the student to identify where their hands change positions/move.
    - c. Discuss repetition (harmonic, rhythmic, etc.).
  8. When two minutes have passed, raise the piano lid and turn the metronome on at quarter note = 60.
  9. Reiterate how important it is to keep moving forward even if errors occur.
  10. With the metronome on, ask the student to sight-read this piece.
  8. Assess the performance. You may choose to ask the student the following questions:
    - a. What went well?
    - b. Were you able to maintain continuity despite any errors?
    - c. Were there spots that were difficult? If so, where?
    - d. Why were they difficult?
    - e. What strategies could you employ in the future to prevent or correct the difficulties that you had?
  9. Repeat the process, this time with *Minuet*. (quarter note = 60 for this piece as well)

# Light and Dark

Op. 89, No. 7

Moderato

Dmitri Kabalevsky  
(1904–1987)

The musical score for "Light and Dark" by Dmitri Kabalevsky, Op. 89, No. 7, is presented in four systems. The piece is in 3/4 time and marked Moderato. The first system begins with a forte (f) dynamic. The second system starts at measure 5. The third system begins with a piano (p) dynamic and measure 9. The fourth system starts at measure 13 and concludes with a forte (f) dynamic. The score includes various musical notations such as notes, rests, and fingerings.

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# Minuet

Daniel Gottlob Türk  
(1756-1813)

**Allegretto**

The musical score is for a Minuet by Daniel Gottlob Türk, marked Allegretto in 3/4 time and key of D major. The piece is in common form, consisting of 8 measures. The first system contains measures 1 through 4, and the second system contains measures 5 through 8. The score is written for piano with a treble and bass staff. The first system begins with a treble staff starting on a whole note D5 (labeled with a '5' above the note) and a bass staff starting on a whole note D4 (labeled with a '1' below the note). The dynamic marking *mf* is placed between the staves. The second system begins with a measure rest in the treble staff (labeled with a '3' above the staff) and a bass staff starting on a whole note D4 (labeled with a '2' below the note). The piece concludes with a final cadence in the eighth measure.

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APPENDIX E  
PUBLISHER PERMISSION LETTERS



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**REPRINT AUTHORIZATION LETTER**

April 18, 2008

Nancy E. Baker  
Louisiana State University  
11101 Reiger Road, Apt. 1012  
Baton Rouge, LA 70809

**Re: *Light and Dark from Masterwork Classics, Levels 1-2 (11716), Love-Let from Music for Sharing, Bk 1 (6581)***

Dear Nancy,

With respect to your request, this letter will serve as our authorization to you to reprint music and lyrics from the above referenced Composition(s) into your dissertation titled *The Effects of Peer Teaching on Undergraduate Music Majors' Achievement of and Attitude Toward Sight-Reading in the Group Piano Setting*. This item is not be sold. This permission is granted to you at no charge.

In the event your project is canceled, please write **VOID** and return this letter to us. Your response within thirty (30) days from the above date is required or this permission shall be deemed withdrawn and the duplication of this material beyond that date shall be considered an infringement of the Copyright Laws of the United States.

If we might be of service in the future, please let us know.

Sincerely,

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May 20, 2008

Nancy Baker  
11101 Reiger Road, Apt. 1012  
Baton Rouge, LA 70809



**Re: Request to reprint; reference no. 0887005**

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May 1, 2008

Ms. Nancy Baker  
Louisiana State University  
11101 Reiger Rd., Apt. 1012  
Baton Rouge, LA 70809

Dear Ms. Baker:

This letter will serve as permission to include all eight measures of *Minuet* from page 9 of *Piano Repertoire, Baroque and Classical (GP600)* by Keith Snell in your dissertation on "The Effects of Peer Teaching on Undergraduate Music Majors' Achievement and Attitude Toward Sight-Reading in the Group Piano Setting" for Louisiana State University, provided you agree to the following terms and return a signed copy of this letter signifying our agreement:

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APPENDIX F  
WEEKLY PEER TEACHING SCHEDULE

**Master Peer Teaching Schedule**  
**Group Piano IV Tutors/Group Piano II Tutees**  
**All meetings take place in Hatcher 346**

**Mondays**

11:40 Peer Pair #1  
12:10 Peer Pair #2  
12:40 Peer Pair #3  
1:10 Peer Pair #4  
1:40 Peer Pair #5  
2:40 Peer Pair #6  
3:30 Peer Pair #7

**Tuesdays**

10:30 Peer Pair #8  
12:40 Peer Pair #9  
3:00 Peer Pair #10

**Wednesdays**

10:40 Peer Pair #11  
11:40 Peer Pair #12  
1:40 Peer Pair #13  
2:10 Peer Pair #14  
3:40 Peer Pair #15  
4:10 Peer Pair #16  
5:15 Peer Pair #17

**Thursdays**

10:00 Peer Pair #18  
12:30 Peer Pair #19

**Fridays**

9:00 Peer Pair #20  
10:30 Peer Pair #21  
11:40 Peer Pair #22  
12:10 Peer Pair #23

APPENDIX G  
WEEKLY SCHEDULE FOR OPEN PIANO LAB TIMES

**Weekly Lab Schedule for Group Piano Sight-Reading**

- The lab will be open each week as indicated below.
  - You need to come to the lab for twenty minutes once a week (for a total of eight weeks).
  - When you enter the lab, you will need to find your name under your group piano section, write the time you enter, and then sign your name.
  - Sight-reading materials and detailed instructions will be available for you.
  - When you leave, you will sign-out by writing the time you left.
- 

**Mondays:**

3:30pm-4:15pm

**Tuesdays:**

9:00-10:30am

4:00pm-5:00pm

**Wednesdays:**

3:30pm-5:30pm

**Thursdays:**

9:00-10:30am

12:30pm-4:30pm

**Fridays:**

9:00am-11:00am

12:30pm-3:30pm

APPENDIX H  
PRETESTS AND POSTTESTS: SIGHT-READING EXERCISES

**Sight-Reading Pretest/Posttest for MUS 1131 (Group Piano II)**

Quarter Note = 70 beats per minute

musical score for Sight-Reading Pretest/Posttest for MUS 1131 (Group Piano II). The score is in treble and bass clefs, key of D major (two sharps), and common time (C). The tempo is marked *mf* (mezzo-forte). The piece consists of two systems of four measures each. The first system shows a melody in the treble clef and a bass line in the bass clef. The second system continues the melody and bass line, with the final measure ending with a double bar line.

**Sight-Reading Pretest/Posttest for MUS 1133 (Group Piano IV)**

Quarter Note = 60 beats per minute

musical score for Sight-Reading Pretest/Posttest for MUS 1133 (Group Piano IV). The score is in treble and bass clefs, key of D major (two sharps), and common time (C). The tempo is marked *mf* (mezzo-forte). The piece consists of two systems of four measures each. The first system shows a melody in the treble clef and a bass line in the bass clef. The second system continues the melody and bass line, with the final measure ending with a double bar line.



# APPENDIX I OBSERVATION FORMS

## Observation Form for Group Piano II Pretest and Posttest

Participant No. \_\_\_\_\_

Circle One:    Pretest                      Posttest

Score \_\_\_\_\_/160

**Measure 1**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| PR | PR | PR | PR |
| RR | RR | RR | RR |
| PL | PL | PL | PL |
| RL | RL | RL | RL |
| C  | C  | C  | C  |

**Measure 2**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| PR | PR | PR | PR |
| RR | RR | RR | RR |
| PL | PL | PL | PL |
| RL | RL | RL | RL |
| C  | C  | C  | C  |

**Measure 3**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| PR | PR | PR | PR |
| RR | RR | RR | RR |
| PL | PL | PL | PL |
| RL | RL | RL | RL |
| C  | C  | C  | C  |

**Measure 4**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| PR | PR | PR | PR |
| RR | RR | RR | RR |
| PL | PL | PL | PL |
| RL | RL | RL | RL |
| C  | C  | C  | C  |

**Measure 5**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| PR | PR | PR | PR |
| RR | RR | RR | RR |
| PL | PL | PL | PL |
| RL | RL | RL | RL |
| C  | C  | C  | C  |

**Measure 6**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| PR | PR | PR | PR |
| RR | RR | RR | RR |
| PL | PL | PL | PL |
| RL | RL | RL | RL |
| C  | C  | C  | C  |

**Measure 7**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| PR | PR | PR | PR |
| RR | RR | RR | RR |
| PL | PL | PL | PL |
| RL | RL | RL | RL |
| C  | C  | C  | C  |

**Measure 8**

|    |    |    |    |
|----|----|----|----|
| 1  | 2  | 3  | 4  |
| PR | PR | PR | PR |
| RR | RR | RR | RR |
| PL | PL | PL | PL |
| RL | RL | RL | RL |
| C  | C  | C  | C  |

## Observation Form for Group Piano IV Pretest and Posttest

Participant No. \_\_\_\_\_

Circle One:    Pretest                      Posttest

Score \_\_\_\_/160

1
2
3
4

| 1  | 2  | 3  | 4  | 1  | 2  | 3  | 4  | 1  | 2  | 3  | 4  | 1  | 2  | 3  | 4  |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR |
| RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR |
| PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL |
| RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL |
| C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  |

5
6
7
8

| 1  | 2  | 3  | 4  | 1  | 2  | 3  | 4  | 1  | 2  | 3  | 4  | 1  | 2  | 3  | 4  |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR | PR |
| RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR | RR |
| PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL | PL |
| RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL | RL |
| C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  | C  |



APPENDIX J  
PRETEST/POSTTEST ATTITUDINAL QUESTIONNAIRE

**Have you ever seen or played the eight-measure piece you just sight-read before?**

Check one: ☐ Yes ☐ No ☐ It looks familiar ☐ I don't know

**1. Currently, I would rate my keyboard sight-reading skills as:**

|                  |   |   |   |   |             |   |
|------------------|---|---|---|---|-------------|---|
| 1                | 2 | 3 | 4 | 5 | 6           | 7 |
|                  |   |   |   |   |             |   |
| <i>Excellent</i> |   |   |   |   | <i>Poor</i> |   |

**2. Compared to the other students at my group piano level, I feel my sight-reading skills are:**

|                      |   |   |   |   |                      |   |
|----------------------|---|---|---|---|----------------------|---|
| 1                    | 2 | 3 | 4 | 5 | 6                    | 7 |
|                      |   |   |   |   |                      |   |
| <i>Above average</i> |   |   |   |   | <i>Below Average</i> |   |

**3. I feel like sight-reading at the keyboard is an important skill.**

|                       |   |   |   |   |                             |   |
|-----------------------|---|---|---|---|-----------------------------|---|
| 1                     | 2 | 3 | 4 | 5 | 6                           | 7 |
|                       |   |   |   |   |                             |   |
| <i>Very important</i> |   |   |   |   | <i>Not at all important</i> |   |

**4. I think it is worthwhile to improve my keyboard sight-reading skills.**

|                        |   |   |   |   |                              |   |
|------------------------|---|---|---|---|------------------------------|---|
| 1                      | 2 | 3 | 4 | 5 | 6                            | 7 |
|                        |   |   |   |   |                              |   |
| <i>Very worthwhile</i> |   |   |   |   | <i>Not at all worthwhile</i> |   |

**5. I think sight-reading at the keyboard is a skill that will be beneficial to me in my future career.**

|                        |   |   |   |   |                              |   |
|------------------------|---|---|---|---|------------------------------|---|
| 1                      | 2 | 3 | 4 | 5 | 6                            | 7 |
|                        |   |   |   |   |                              |   |
| <i>Very beneficial</i> |   |   |   |   | <i>Not at all beneficial</i> |   |

**6. I feel like I am capable of maintaining continuity (not hesitating) even when pitch and rhythm errors occur.**

|                          |   |   |   |   |                             |   |
|--------------------------|---|---|---|---|-----------------------------|---|
| 1                        | 2 | 3 | 4 | 5 | 6                           | 7 |
|                          |   |   |   |   |                             |   |
| <i>Yes, very capable</i> |   |   |   |   | <i>No, not very capable</i> |   |

**7. I tend to hesitate at the bar lines when sight-reading.**

|               |   |   |   |   |              |   |
|---------------|---|---|---|---|--------------|---|
| 1             | 2 | 3 | 4 | 5 | 6            | 7 |
|               |   |   |   |   |              |   |
| <i>Always</i> |   |   |   |   | <i>Never</i> |   |

**8. If I miss a note while sight-reading, I am still able to move forward in the appropriate tempo of the piece, even if I have to drop out a hand for a few measures.**

|               |   |   |   |   |              |   |
|---------------|---|---|---|---|--------------|---|
| 1             | 2 | 3 | 4 | 5 | 6            | 7 |
|               |   |   |   |   |              |   |
| <i>Always</i> |   |   |   |   | <i>Never</i> |   |

**9. I determine the key and the time signature before I sight-read.**

|               |   |   |   |   |              |   |
|---------------|---|---|---|---|--------------|---|
| 1             | 2 | 3 | 4 | 5 | 6            | 7 |
|               |   |   |   |   |              |   |
| <i>Always</i> |   |   |   |   | <i>Never</i> |   |

**10. I identify patterns, such as scalar or chordal structures, in the score before I sight-read.**

|               |   |   |   |   |              |   |
|---------------|---|---|---|---|--------------|---|
| 1             | 2 | 3 | 4 | 5 | 6            | 7 |
|               |   |   |   |   |              |   |
| <i>Always</i> |   |   |   |   | <i>Never</i> |   |

**11. I tap the rhythm before I sight-read at the keyboard.**

|               |   |   |   |   |              |   |
|---------------|---|---|---|---|--------------|---|
| 1             | 2 | 3 | 4 | 5 | 6            | 7 |
|               |   |   |   |   |              |   |
| <i>Always</i> |   |   |   |   | <i>Never</i> |   |

APPENDIX K  
ADDENDUM TO POSTTEST QUESTIONNAIRE FOR TUTEES

**1. Overall, I would rate the experience I had being tutored in sight-reading by a slightly more advanced peer as:**

|                 |   |   |   |   |                 |   |
|-----------------|---|---|---|---|-----------------|---|
| 1               | 2 | 3 | 4 | 5 | 6               | 7 |
| <i>Positive</i> |   |   |   |   | <i>Negative</i> |   |

**2. At the beginning of the semester, I would have rated my sight-reading skills as:**

|                  |   |   |   |   |             |   |
|------------------|---|---|---|---|-------------|---|
| 1                | 2 | 3 | 4 | 5 | 6           | 7 |
| <i>Excellent</i> |   |   |   |   | <i>Poor</i> |   |

**3. Currently, I would rate my sight-reading skills as:**

|                  |   |   |   |   |             |   |
|------------------|---|---|---|---|-------------|---|
| 1                | 2 | 3 | 4 | 5 | 6           | 7 |
| <i>Excellent</i> |   |   |   |   | <i>Poor</i> |   |

**4. I feel like my sight-reading has improved since the beginning of the semester.**

|                       |   |   |   |   |                            |   |
|-----------------------|---|---|---|---|----------------------------|---|
| 1                     | 2 | 3 | 4 | 5 | 6                          | 7 |
| <i>Improved a Lot</i> |   |   |   |   | <i>Not Improved at all</i> |   |

**5. Being tutored in sight-reading forced me to examine the process I personally use when sight-reading.**

|                       |   |   |   |   |                            |   |
|-----------------------|---|---|---|---|----------------------------|---|
| 1                     | 2 | 3 | 4 | 5 | 6                          | 7 |
| <i>Examined a lot</i> |   |   |   |   | <i>Not examined at all</i> |   |

**6. I feel like being tutored in sight-reading caused my sight-reading skills to improve.**

|                   |   |   |   |   |                       |   |
|-------------------|---|---|---|---|-----------------------|---|
| 1                 | 2 | 3 | 4 | 5 | 6                     | 7 |
| <i>Yes, a lot</i> |   |   |   |   | <i>No, not at all</i> |   |

**7. I feel like playing duets with my tutor made me more aware of playing continuously (not hesitating when errors occur).**

|                        |   |   |   |   |                              |   |
|------------------------|---|---|---|---|------------------------------|---|
| 1                      | 2 | 3 | 4 | 5 | 6                            | 7 |
| <i>Much more aware</i> |   |   |   |   | <i>Not at all more aware</i> |   |

**8. I felt confident as a sight-reader when I played duets with my tutor.**

|                       |   |   |   |   |                             |   |
|-----------------------|---|---|---|---|-----------------------------|---|
| 1                     | 2 | 3 | 4 | 5 | 6                           | 7 |
| <i>Very confident</i> |   |   |   |   | <i>Not at all confident</i> |   |

**9. Sight-reading duets with my tutor was fun and motivational.**

|                                  |   |   |   |   |  |   |
|----------------------------------|---|---|---|---|--|---|
| 1                                | 2 | 3 | 4 | 5 | 6                                      | 7 |
| <i>Very fun and motivational</i> |   |   |   |   | <i>Not at all fun and motivational</i> |   |

**10. I felt like my tutor was knowledgeable enough about sight-reading to lead me through the sight-reading process.**

|                                  |   |   |   |   |                                     |   |
|----------------------------------|---|---|---|---|-------------------------------------|---|
| 1                                | 2 | 3 | 4 | 5 | 6                                   | 7 |
| <i>Yes, knowledgeable enough</i> |   |   |   |   | <i>No, not knowledgeable enough</i> |   |

**11. I felt like the sight-reading sessions I had with my tutor were worthwhile.**

|                        |   |   |   |   |                              |   |
|------------------------|---|---|---|---|------------------------------|---|
| 1                      | 2 | 3 | 4 | 5 | 6                            | 7 |
| <i>Very worthwhile</i> |   |   |   |   | <i>Not at all worthwhile</i> |   |

**12. I would recommend sight-reading tutoring to future students taking Group Piano II.**

|                         |   |   |   |   |                             |   |
|-------------------------|---|---|---|---|-----------------------------|---|
| 1                       | 2 | 3 | 4 | 5 | 6                           | 7 |
| <i>Highly recommend</i> |   |   |   |   | <i>Not at all recommend</i> |   |

**13. Being tutored in sight-reading was a low-pressure situation.**

|                     |   |   |   |                      |   |   |
|---------------------|---|---|---|----------------------|---|---|
| 1                   | 2 | 3 | 4 | 5                    | 6 | 7 |
| <i>Low-pressure</i> |   |   |   | <i>High pressure</i> |   |   |

**14. My tutor and I worked well together.**

|                                  |   |   |   |  |   |   |
|----------------------------------|---|---|---|--|---|---|
| 1                                | 2 | 3 | 4 | 5  | 6 | 7 |
| <i>Worked very well together</i> |   |   |   | <i>Did not work well together at all</i> |   |   |

**15. My tutor helped me identify patterns (scalar passages, chordal structures, repetition, etc.) in the music before I sight-read.**

|                   |   |   |   |                       |   |   |
|-------------------|---|---|---|-----------------------|---|---|
| 1                 | 2 | 3 | 4 | 5                     | 6 | 7 |
| <i>Yes, a lot</i> |   |   |   | <i>No, not at all</i> |   |   |

**16. My tutor felt accountable for my personal progress in sight-reading.**

|   |   |   |   |                                   |   |   |
|---|---|---|---|-----------------------------------|---|---|
| 1                                       | 2 | 3 | 4 | 5                                 | 6 | 7 |
| <i>A strong sense of accountability</i> |   |   |   | <i>No sense of accountability</i> |   |   |

**17. I feel like I improved as a sight-reader because of my tutor.**

|                            |   |   |   |                                |   |   |
|----------------------------|---|---|---|--------------------------------|---|---|
| 1                          | 2 | 3 | 4 | 5                              | 6 | 7 |
| <i>Yes, improved a lot</i> |   |   |   | <i>No, not improved at all</i> |   |   |

**18. By the end of the ten sessions, I was generally able to sight-read continuously when my tutor and I played duets together.**

|                                  |   |   |   |                            |   |   |
|----------------------------------|---|---|---|----------------------------|---|---|
| 1                                | 2 | 3 | 4 | 5                          | 6 | 7 |
| <i>Overall pretty continuous</i> |   |   |   | <i>Not at all continuo</i> |   |   |

**19. By the end of the ten sessions, I was generally able to sight-read continuously when sight-reading alone.**

|                                  |   |   |   |                              |   |   |
|----------------------------------|---|---|---|------------------------------|---|---|
| 1                                | 2 | 3 | 4 | 5                            | 6 | 7 |
| <i>Overall pretty continuous</i> |   |   |   | <i>Not at all continuous</i> |   |   |

**20. By the end of the ten sessions, I was generally sight-reading with accuracy (roughly only several note or rhythmic errors in each exercise).**

|                             |   |   |   |                                |   |   |
|-----------------------------|---|---|---|--------------------------------|---|---|
| 1                           | 2 | 3 | 4 | 5                              | 6 | 7 |
| <i>Yes, fairly accurate</i> |   |   |   | <i>No, not at all accurate</i> |   |   |

**21. My tutor thought our sessions were worthwhile.**

|                        |   |   |   |                              |   |   |
|------------------------|---|---|---|------------------------------|---|---|
| 1                      | 2 | 3 | 4 | 5                            | 6 | 7 |
| <i>Very worthwhile</i> |   |   |   | <i>Not at all worthwhile</i> |   |   |

Open ended:

For me, the most valuable part this experience - being tutored in sight-reading - was:

The most difficult or frustrating part of this experience was:

What suggestions would you make regarding the peer teaching process?

Any additional comments:

APPENDIX L  
ADDENDUM TO POSTTEST QUESTIONNAIRE FOR TUTORS

**1. I would rate my overall experience peer teaching sight-reading as:**

|                 |   |   |   |   |   |                 |
|-----------------|---|---|---|---|---|-----------------|
| 1               | 2 | 3 | 4 | 5 | 6 | 7               |
|                 |   |   |   |   |   | <i>Negative</i> |
| <i>Positive</i> |   |   |   |   |   |                 |

**2. At the beginning of the semester, I would have rated my sight-reading skills as:**

|                  |   |   |   |   |   |             |
|------------------|---|---|---|---|---|-------------|
| 1                | 2 | 3 | 4 | 5 | 6 | 7           |
|                  |   |   |   |   |   | <i>Poor</i> |
| <i>Excellent</i> |   |   |   |   |   |             |

**3. Currently, I would rate my sight-reading skills as:**

|                  |   |   |   |   |   |             |
|------------------|---|---|---|---|---|-------------|
| 1                | 2 | 3 | 4 | 5 | 6 | 7           |
|                  |   |   |   |   |   | <i>Poor</i> |
| <i>Excellent</i> |   |   |   |   |   |             |

**4. I feel like my sight-reading has improved since the beginning of the semester.**

|                       |   |   |   |   |   |                            |
|-----------------------|---|---|---|---|---|----------------------------|
| 1                     | 2 | 3 | 4 | 5 | 6 | 7                          |
|                       |   |   |   |   |   | <i>Not improved at all</i> |
| <i>Improved a lot</i> |   |   |   |   |   |                            |

**5. Teaching sight-reading to another student forced me to examine the process I personally use when sight-reading.**

|                       |   |   |   |   |   |                            |
|-----------------------|---|---|---|---|---|----------------------------|
| 1                     | 2 | 3 | 4 | 5 | 6 | 7                          |
|                       |   |   |   |   |   | <i>Not examined at all</i> |
| <i>Examined a lot</i> |   |   |   |   |   |                            |

**6. I feel like teaching sight-reading caused my own sight-reading skills to improve.**

|                  |   |   |   |   |   |             |
|------------------|---|---|---|---|---|-------------|
| 1                | 2 | 3 | 4 | 5 | 6 | 7           |
|                  |   |   |   |   |   | <i>Poor</i> |
| <i>Excellent</i> |   |   |   |   |   |             |

**7. I feel like playing duets with my tutee (partner) made me more aware of playing continuously (not hesitating when errors occur).**

|                        |   |   |   |   |   |                              |
|------------------------|---|---|---|---|---|------------------------------|
| 1                      | 2 | 3 | 4 | 5 | 6 | 7                            |
|                        |   |   |   |   |   | <i>Not at all more aware</i> |
| <i>Much more aware</i> |   |   |   |   |   |                              |

**8. Sight-reading duets with my tutee (partner) was fun and motivational.**

|                                  |   |   |   |   |   |  |
|----------------------------------|---|---|---|---|---|--|
| 1                                | 2 | 3 | 4 | 5 | 6 | 7                                      |
|                                  |   |   |   |   |   | <i>Not at all fun and motivational</i> |
| <i>Very fun and motivational</i> |   |   |   |   |   |  |

**9. I felt like I was knowledgeable enough about sight-reading to lead my tutee (partner) through the sight-reading process.**

|                                  |   |   |   |   |   |                                     |
|----------------------------------|---|---|---|---|---|-------------------------------------|
| 1                                | 2 | 3 | 4 | 5 | 6 | 7                                   |
|                                  |   |   |   |   |   | <i>No, not knowledgeable enough</i> |
| <i>Yes, knowledgeable enough</i> |   |   |   |   |   |                                     |

**10. I felt like the sight-reading sessions I had with my partner were worthwhile.**

|                        |   |   |   |   |   |                              |
|------------------------|---|---|---|---|---|------------------------------|
| 1                      | 2 | 3 | 4 | 5 | 6 | 7                            |
|                        |   |   |   |   |   | <i>Not at all worthwhile</i> |
| <i>Very worthwhile</i> |   |   |   |   |   |                              |

**11. I would recommend peer teaching sight-reading to future students taking Group Piano IV.**

|                         |   |   |   |   |   |                             |
|-------------------------|---|---|---|---|---|-----------------------------|
| 1                       | 2 | 3 | 4 | 5 | 6 | 7                           |
|                         |   |   |   |   |   | <i>Not at all recommend</i> |
| <i>Highly recommend</i> |   |   |   |   |   |                             |

**12. Teaching my tutee (partner) to sight-read was a low-pressure situation.**

|                     |   |   |   |   |   |                      |
|---------------------|---|---|---|---|---|----------------------|
| 1                   | 2 | 3 | 4 | 5 | 6 | 7                    |
|                     |   |   |   |   |   | <i>High pressure</i> |
| <i>Low-pressure</i> |   |   |   |   |   |                      |

**13. My tutee (partner) and I worked well together.**

|                                  |   |   |   |                                   |   |   |
|----------------------------------|---|---|---|-----------------------------------|---|---|
| 1                                | 2 | 3 | 4 | 5                                 | 6 | 7 |
| <i>Worked very well together</i> |   |   |   | <i>Did not work well together</i> |   |   |

**14. I felt a sense of accountability regarding my tutee's progress in sight-reading.**

|   |   |   |   |                                   |   |   |
|---|---|---|---|-----------------------------------|---|---|
| 1                                       | 2 | 3 | 4 | 5                                 | 6 | 7 |
| <i>A strong sense of accountability</i> |   |   |   | <i>no sense of accountability</i> |   |   |

**15. At the beginning of the semester, I would have rated my tutee's (partner's) sight reading skills as:**

|                  |   |   |   |   |   |             |
|------------------|---|---|---|---|---|-------------|
| 1                | 2 | 3 | 4 | 5 | 6 | 7           |
| <i>Excellent</i> |   |   |   |   |   | <i>Poor</i> |

**16. Currently, I would rate my tutee's (partner's) sight-reading skills as:**

|                  |   |   |   |   |   |             |
|------------------|---|---|---|---|---|-------------|
| 1                | 2 | 3 | 4 | 5 | 6 | 7           |
| <i>Excellent</i> |   |   |   |   |   | <i>Poor</i> |

**17. I feel like my tutee (partner) benefited from the sessions we had together.**

|                             |   |   |   |                                   |   |   |
|-----------------------------|---|---|---|-----------------------------------|---|---|
| 1                           | 2 | 3 | 4 | 5                                 | 6 | 7 |
| <i>Yes, Benefited a lot</i> |   |   |   | <i>No, did not benefit at all</i> |   |   |

**18. Because of my teaching, my tutee (partner) has improved as a sight-reader.**

|                            |   |   |   |                                |   |   |
|----------------------------|---|---|---|--------------------------------|---|---|
| 1                          | 2 | 3 | 4 | 5                              | 6 | 7 |
| <i>Yes, improved a lot</i> |   |   |   | <i>No, not improved at all</i> |   |   |

**19. By the end of the ten sessions, my tutee (partner) was generally able to sight-read continuously when we played duets together.**

|                                  |   |   |   |                              |   |   |
|----------------------------------|---|---|---|------------------------------|---|---|
| 1                                | 2 | 3 | 4 | 5                            | 6 | 7 |
| <i>Overall pretty continuous</i> |   |   |   | <i>Not at all continuous</i> |   |   |

**20. By the end of the ten sessions, my tutee (partner) was generally able to sight-read continuously when sight-reading alone.**

|                                  |   |   |   |                              |   |   |
|----------------------------------|---|---|---|------------------------------|---|---|
| 1                                | 2 | 3 | 4 | 5                            | 6 | 7 |
| <i>Overall pretty continuous</i> |   |   |   | <i>Not at all continuous</i> |   |   |

**21. By the end of the ten sessions, my tutee (partner) was sight-reading with accuracy (roughly only several note errors in each exercise).**

|                               |   |   |   |                                |   |   |
|-------------------------------|---|---|---|--------------------------------|---|---|
| 1                             | 2 | 3 | 4 | 5                              | 6 | 7 |
| <i>Yes, fairly accurately</i> |   |   |   | <i>No, not at all accurate</i> |   |   |

**22. I feel like my tutee (partner) thought our sessions were worthwhile.**

|                        |   |   |   |                              |   |   |
|------------------------|---|---|---|------------------------------|---|---|
| 1                      | 2 | 3 | 4 | 5                            | 6 | 7 |
| <i>Very worthwhile</i> |   |   |   | <i>Not at all worthwhile</i> |   |   |

### Open ended Questions

For me, the most valuable part of this experience - teaching sight-reading to my partner - was:

The most difficult or frustrating part of this experience was:

Describe your tutee's (partner's) biggest obstacle when sight-reading and explain how you attempted to address this issue in your teaching.

What suggestions would you make regarding the peer teaching process?

Any additional comments:

APPENDIX M  
PRETEST AND POSTTEST: SEQUENCE OF EVENTS

- Make sure at least 5 minutes of video are available on the DVD.
- Make sure that the date and counter displays are showing in the camera window.
- Make sure that hands and fingers will be clearly recorded.
- Ask the first participant to enter the room.
- Hand the participant the instructions for the pretest/posttest (Appendix G).
- Read these instructions aloud to the participant.
- Hand the participant the sight-reading pretest.
- Press RECORD.
- Inform the participant that you are leaving the room and then do so.
- Use a stopwatch to verify that two minutes have passed.
- Re-enter the room after two minutes have passed.
- Create a new thumbnail on the DVD camcorder.
- Turn the metronome to the appropriate tempo (either quarter note = 60 or 70, depending on the level of the participant).
- Turn on the metronome and instruct the participant to sight-read the exercise, and leave the room.
- When the participant has completed sight-reading, re-enter the room and press pause on the camcorder.
- Hand the participant the attitudinal questionnaire and a pencil.
- Ask the participant to complete the questionnaire in the hallway and then to place it in the envelope outside the door.
- Re-set the stopwatch.
- Check the camera for available recording space.
- Repeat this process with each participant.



APPENDIX N  
INSTRUCTIONS FOR THE PRETEST/POSTTEST

Please read the following instructions silently as I read them aloud to you.

In a moment, you will be handed an eight-measure piece to sight-read at the piano. Before you sight-read, you will have two minutes to mentally prepare. During these two minutes the piano lid will be closed and you will not be permitted to play the piano. You will, however, be permitted to count aloud, tap, write on the score, use the metronome, or employ any other type of mental preparation that you find beneficial prior to sight-reading.

I will notify you when the two minutes have passed. At this point, the metronome will be set to the marking indicated on the score. After the metronome is turned on, you will be asked to play the sight-reading exercise, and the metronome will remain on while you are playing. It is important that you continue to play without hesitating or stopping regardless of any errors that might occur.

You will be videotaped during the two minutes of mental preparation and also while you are sight-reading at the piano. Here is a metronome you may choose to use during these two minutes, and here is a pencil if you choose to write on the score.

I will return in two minutes. Here is the music.

APPENDIX O  
EXAMPLE OF A SIGHT-READING TASK ANALYSIS

**Distributed to all three group piano instructors of MUS 1131**

Sight-Reading Excerpt from *Alfred's Group Piano for Adults, Book 1*, pg. 175



- Put the sight-reading exercise on the overhead projector and ask students to turn to pg. 185.
  - Set a timer for two minutes. Complete as much of the following pre-sight-reading preparation as possible before two minutes passes.
- 
- Ask students to mentally take note of the key signature and the time signature.
    - Ask one student to state them aloud.
  - Call on a student to identify the scalar patterns in this exercise.
    - As scalar passages are identified, mark them on the overhead.
  - Call on another student to identify chordal structures in this exercise.
    - As they are identified, mark them on the overhead.
  - Lead the class in tapping the rhythm hands together.
    - Tap at the metronome marking quarter note = 70 beats per minute.
  - Call on a student to identify position shifts in the right hand.
  - Call on a student to identify position shifts in the left hand.

- With the time that is left over (if any) realize a Roman Numeral Analysis for each harmony change, calling on a different student for every harmony.
- 

- When the timer goes off, set the metronome to quarter note = 70.
- Reiterate the importance of not stopping while playing and always moving forward.
- With the metronome on, lead the class through sight-reading at the keyboard.
- After sight-reading is over, ask one student to assess his/her sight-reading performance.
  - What went well?
  - What did not go well? Why?
  - What strategy can you employ to improve this?

APPENDIX P  
COMPILED RESPONSES TO GROUP PIANO II OPEN-ENDED ADDENDUM QUESTIONS

Addendum to Attitudinal Questionnaire (Appendix C) for Peer Tutees  
Open-ended questions  
Group Piano II

Open-Ended Questions

**For me, the most valuable part of this experience – being tutored in sight-reading – was:**

- Being forced to do it.
- Helping with skills on exams.
- High frequency of sight-reading.
- Extra time to practice my sight-reading skills. Practicing is always a positive thing.
- Just practicing sight-reading.
- Forcing myself to practice sight-reading.
- Having it every week the practice is what helped.
- Getting tips from someone else each week on different ways to look at the music before playing.
- Being able to practice sight-reading outside of class.
- The process of sight-reading on a regular basis in a relaxed environment.
- Having an assigned time every week where all I did was practice sight-reading with someone else better than me.
- Getting guided practice from a tutor, and not just staying in old sight-reading habits.
- Getting to work with someone my age who was a bit more advanced than me; who could teach me from his experiences.
- Extra experience with reading with a teacher.
- The access and requirement of performing piano weekly. Normally, I would not play piano every week besides in class.
- Beginning to feel more comfortable and confident about sight-reading.
- Participating in playing duets with my tutor. I thought the duets took a lot of the pressure off sight-reading and they were fun to play.
- Learning what to look for/make note of when you only have a few minutes to prepare a piece.
- Being taught from a different point of view. The person that I worked with was in the same classes that I was, so at this time we are going through the same academics, and she can comprehend my learning at a better level than some of the professors might.
- Very beneficial.
- Being able to improve my sight-reading skills!
- Having individual attention, get more out of it than a full classroom situation.

**The most difficult or frustrating part of this experience was:**

- Fitting an extra class into my schedule that was not planned for.
- Nothing!
- Being video-taped.
- The two-minute period of examining the music without a piano. I am used to having the piano, so I had to change my learning process during sight-reading.
- Just the sight-reading in general. It's never as fun to play something you can't play exceptionally well. But it was really good for me despite the lack of fun.
- Not doing well at sight-reading. I am used to performing well on my other instrument, but accepting that I'm not as good on piano was difficult. I could read the music but the notes didn't come out. That disconnect was frustrating.
- In the beginning when my sight-reading was really difficult.
- Slow improvement.
- Sight-reading itself. (I'm not good.)
- Just having to go in the middle of the day when I'd rather be taking a nap.
- Making mistakes on easy pieces.
- Not being able to choose what time we meet each week.
- Nothing.
- I'll never do it again.
- Not playing well in front of my tutor.
- To keep going if I made mistakes.
- Messing up easy patterns/rhythms.
- The time of day my tutorial was scheduled for.
- Did not feel tutor always knew how to handle teaching.
- When it jumped up in difficulty on the last session.

**What suggestions would you make regarding the peer teaching process?**

- I don't have any.
- General comments from "students."
- More playing and less analyzing.
- Nothing.
- Remove the clock.
- Nothing.
- Allow the more advanced students to make more suggestions.
- I'll never do it again.
- Keep doing it – make sure the tutor is positive because mine was and it helps a lot!
- I have no suggestions.
- More solo works – that's what's on the tests.
- My partner had played for many years, and the knowledge that she was able to give me spread outside of our sight-reading practices, and I use it during my regular piano class.
- I imagine a lot depends on the tutor. Maybe have a selection process.

**Any additional comments:**

- I think you should definitely continue doing it! It helped me a lot!
- My partner and I are still playing duets together outside of this process. It gives me better skills as I pursue this and play with her.
- Great idea!
- Students should test into or out of group piano – I didn't need this class, and it was a waste of my time.
- It was fun.

APPENDIX Q  
COMPILED RESPONSES TO GROUP PIANO IV OPEN-ENDED ADDENDUM  
QUESTIONS

Addendum to Attitudinal Questionnaire (Appendix D) for Peer Tutees  
Open-ended questions  
Group Piano IV

Open-Ended Questions

**For me, the most valuable part of this experience – teaching sight-reading to my partner – was:**

- Getting more teaching experience
- I got to practice teaching (thinking about what would be most helpful for my partner).
- Forcing me to examine my own sight-reading methods. I also made a new friend.
- Being comfortable giving someone advice with confidence.
- It forced me to continue playing even if I made a mistake during our duets and it helped me develop a step-by-step process for sight-reading.
- Seeing my partner improve and being able to be a part of that.
- Really getting more experience in a teaching environment.
- Doing this in front of a camera – generally I would be very nervous.
- Helping my partner gain confidence in sight-reading.
- Realizing what process I personally employ while sight-reading.
- Having a time set aside specifically for sight-reading. I think those focused sessions improved my sight-reading abilities.
- Seeing how much my partner was able to progress just by spending an extra 30 minutes or so at the piano.
- Continuous playing – being forced to do so.
- Being a better sight-reader myself, if only slightly.
- Getting to know a younger music student.
- Learning to become a better sight-reader myself.
- I realized that I could really help someone and that I should be more confident in what I know and what I have learned from piano classes at LSU.
- Teaching experience.
- Having myself sight-read.
- Getting to know another student and sharing the learning experience together. It required me to prepare ahead of time and think like my student.

**The most difficult or frustrating part of his experience was:**

- Scheduling, but my schedule is NOT forgiving. Ms. Baker was always willing and available to work with me!
- Feeling under-qualified to teach piano sight-reading.
- Screwing up sight-reading.

- When I would mess up and my partner would be doing very well but we both had our good and bad days.
- The extra time it took and added to the class.
- It took extra time out of the schedule.
- Scheduling.
- Keeping up most times. She sight-read her material better than I did mine sometimes.
- Not being a good enough pianist to show my partner how it's done.
- Evaluating her sight-reading and sticking to the presented instructions (i.e. not replaying through parts/tough transitions).
- Having to meet at a time outside of class.
- Trying to play my part correctly while trying to listen to my partner.
- Taking extra time to do it.
- Staying focused throughout the process.
- Trying to get schedules to line up.
- Not always having comments to say.
- I didn't find anything difficult or frustrating.
- Not always being able to "fix" problems my partner had with continuity.
- Nothing. It was a fun experience. Also, my tutee was a pretty good sight-reader.
- Preparing for the sight-reading sessions – (just because it took a little bit of time).
- Scheduling with my partner.

**Describe your tutee's (partner's) biggest obstacle when sight-reading and explain how you attempted to address this issue in your teaching.**

- Struggled when chords changed and got him to play just chords.
- Getting the right notes when both hands were together was a big problem. I addressed this issue by trying to find chord patterns in the LH so it would be easier to focus on the RH.
- Just hitting the right notes sometimes. He did very well just moving on though. Frequently, we went back and discussed which notes would have been right and how he should have played them.
- Continuity through mistakes – he wanted to redo the parts he missed. I tried to repeatedly stress the importance of moving forward, not backwards.
- My partner was actually an amazing sight-reader and we didn't have any obstacles. (Except when we'd accidentally start our duets in the wrong octave.)
- Playing two hands together. I encouraged him to sight-read on his own and work on playing with two hands together whenever he practices.
- Biggest obstacle I thought was getting him to play after making a mistake. I told him they are just notes, if you miss no big deal. Just continue through the music.
- He had trouble looking ahead while playing, which could only be fixed by looking ahead.
- Stopping – I just reiterated continuity importance.
- Possibly, establishing continuity. I discussed techniques for improving this and emphasized it while he was performing his sight-reading.
- My partner's biggest obstacle was playing both hands together. It wasn't a lack of coordination – it was that he had trouble reading two different clefs at once. I didn't really know how to help him, so I just suggested that he practiced reading both clefs more.



- Watching for skips and leaps and hand positions moving. We always identified those things before playing it by tapping, shadowing keys, etc.
- Playing both hands together. I would ask him to identify what was going on in both hands. He knew his chords which was good.
- She was good to begin with, just some missed notes here and there, which were less as she progressed and learned chordal patterns. Dynamics were most often overlooked.
- Hands-together work did not register with her. We worked on chords and paying attention to LH positions to help with this.
- Getting overwhelmed with the notes and stopping – we found more effective ways to prepare.
- When they had a lot of sharps and flats. He would play the chords out before he played but when adding the right hand he would freeze and forget them.
- Reading bass cleff: He practiced bass clef more and got better.
- Did not recognize I, IV, and V7 chords.
- CONTINUITY! It's hard to keep going when you are playing in front of someone.

### **What suggestions would you make regarding the peer teaching process?**

- Maybe 2 out of the 8 sessions there is a teacher there to assist in the guidance of peer teaching. Help with corrections, etc.
- Let teachers be more free with directions.
- I would not change a thing!
- Use a different method of sight-reading.
- Make the repertoire gradually more difficult instead of some hard and some easy.
- Know your chords and inversions.
- Less duets, more solo sight-reading to evaluate.
- It really would have been nice if we could have done this during our regular class time, but I know that's probably logistically impossible. Also, I felt that I was such a poor sight-reader myself that I didn't have any business teaching someone else. Some sort of training in how to teach it may have been helpful.
- Overall, seems fine, may want to supply pieces to sight-read over the week in order to practice techniques discussed in the sessions.
- Fine as is.
- I would try to make the scheduling process a little bit smoother.
- Maybe each week to go over helpful teaching techniques (one per week) in class.
- Perhaps have a duet repertoire piece given to each pair at the beginning and work at it until the last session when it can be played together. That way you have sight-reading and repertoire development practice (plus, more complex duets are fun!).
- I'm not a great sight-reader, and neither is my partner, so it was easier to help her. If my buddy was a great sight-reader, then the sessions might have been frustrating. Basically, I am saying that the partner pairing process is important (I was paired well).

**Any additional comments:**

- I had a fantastic time with peer sight-reading! I've never really gotten to teach piano before, and so I enjoyed the new experience.
- It was not as scary as I thought it would be!
- Overall, this was a good idea. I feel the Group Piano II student was able to benefit more than me.
- Valuable experience, would recommend continuing. Especially good practice for Mued majors.
- I did not feel like this benefitted me or my partner. Neither of us responded well to this method of sight-reading.
- I had so much fun. I wish we could have been doing this in previous group piano classes. Also I wish that we had one-on-one with teachers so that we could do the same with them – so we could grow more.
- I very much enjoyed this. I love to help people in anything I can!

## VITA

Nancy Elizabeth Baker was born in June 1980 to Robert and Deborah Baker of Lexington, Kentucky. She graduated *summa cum laude* from Paul Laurence Dunbar High School in 1998. In 2002, she received the degree of Bachelor of Music in piano performance from Louisiana State University in Baton Rouge, Louisiana, and was the recipient of the Arden O. French Award and the Presser Scholarship Award. From 1999 to 2002, Ms. Baker taught piano lessons at O'Neill's Music House in Baton Rouge.

Ms. Baker received the degree of Master of Music in piano pedagogy from Florida State University in Tallahassee, Florida, in 2004. While working on this degree, her graduate assistantship duties consisted of teaching all levels of group piano for non-keyboard music majors in addition to serving as the piano pedagogy librarian. For her final master's project she wrote a manual entitled *A Graduate Student's Guide to Teaching Group Piano*, and this manual was used in group piano teacher training at Florida State University.

Ms. Baker is a candidate for the degree of Doctor of Philosophy in music with a concentration in music education and a minor in piano pedagogy at Louisiana State University. As a graduate assistant, she taught all levels of group piano for non-keyboard music majors, applied piano for piano minors and secondary students, group piano for non-music majors, and piano pedagogy for undergraduate keyboard principals. She also taught vocal techniques for instrumental music majors, supervised pre-service music teachers in the elementary and high schools in Baton Rouge, and served as a graduate teaching assistant for the courses Principles of Teaching Secondary School Choral Music and Principles of Teaching Elementary School Music. In the summer of 2006, Ms. Baker was the interim coordinator for the LSU Music Academy. From 2004 to 2008, Ms. Baker maintained a private piano studio with students ranging from

elementary through advanced levels. She also taught Beginning Group Piano Leisure Classes to adults in the community.

A Nationally Certified Teacher of Music through Music Teachers National Association, Ms. Baker is an active member of MTNA on the local, state, and national levels. Ms. Baker has served as an adjudicator of pre-college piano events throughout the state of Louisiana. She has also presented workshops and lectures for local chapters throughout the state and has presented sessions at Louisiana Music Teachers Association state conferences. Furthermore, she has presented research poster sessions at the 2008 National Conference of MTNA in Denver, Colorado, as well as at the 2007 National Conference on Keyboard Pedagogy in Oak Brook, Illinois.

In August of 2008, Ms. Baker will serve on the faculty of the University of South Carolina School of Music in Columbia, South Carolina, as Assistant Professor of Piano Pedagogy. She will teach piano pedagogy, group piano, and coordinate the Community Music Program.