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UNIVERSITY OF OKLAHOMA

GRADUATE COLLEGE

UNIVERSITY STUDENTS' VIEWS ON PIANO PRACTICING: A SURVEY OF PIANO MAJORS AT THE UNIVERSITY OF OKLAHOMA

A DOCUMENT

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements

for the degree of

DOCTOR OF MUSICAL ARTS

by

NUYI KONG

Norman, Oklahoma

2001

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A SURVEY OF PIANO MAJORS

AT THE UNIVERSITY OF OKLAHOMA

A DOCUMENT

APPROVED FOR THE SCHOOL OF MUSIC

By

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ABSTRACT

UNIVERSITY STUDENTS' VIEWS ON PIANO PRACTICING: A SURVEY OF PIANO MAJORS AT THE UNIVERSITY OF OKLAHOMA

By Nuyi Kong

Co-Major Professor: Edward Gates, D.M.A.

Co-Major Professor: Jane Magrath, D.M.A.

The purpose of this study is to examine piano majors' views on practice and identify the kinds of information students need to improve their practice. Five BM, six MM, and five DMA students at the University of Oklahoma participated in the survey during the Spring 2001 semester. The survey instrument is divided into seven sections: practice time, motivation, and goal-setting; nature of practice; conscious practice; practice organization and pacing; utilization of practice strategies; understanding of personal learning styles; and reading related to practice as well as students' general thoughts on practice. Forty-eight of the questions in the instrument are based upon indications and recommendations from related literature and the researcher's background. The instrument includes open-ended questions, scaled items, and checklists.

The data reveal that the participants are very well aware of the nature of practice and their learning styles and that they utilize varied practice strategies in their

practice. However, some students need more information on listening skills and alternative practice strategies. Further, they need to know the value of self-evaluation, self-critiquing, sight-reading, improvisational skill, keeping lesson or practice logs, and piano- and practice-related reading and include them in each practice session. There were not significant differences between academic levels, except for the amount of reading and practice hours. DMA students recognized more books listed in the question than BM and MM students did, and DMA students' responses revealed that they practice less than BM and MM students do. Overall, students' responses reflect variations in educational backgrounds, personal traits and experience, teachers' influence, and the development of their mental attitudes regarding practice.

The following areas for further study are recommended. First of all, comparative studies could be undertaken, such as a comparison between students' views on practice from different studios, a comparison between teachers' instruction and students' actual practice behaviors, a comparison between practice behaviors of students who take pedagogy classes and students who do not, and a comparison between Asian students' practice behaviors and those of American students. Further, valuable information could be gathered through controlled research on practice room environment, observation of students' actual practice sessions, study of how students listen to themselves while practicing, investigation of the benefits of listening to model performances, examination of effective use of audiotaping, study of collegiate piano majors' approaches to the learning and interpretation of music, and controlled research on lesson/practice logs. Finally, designing a diagnostic questionnaire for

new students based on the information gained from this study and related studies is recommended.

UNIVERSITY STUDENTS' VIEWS ON PIANO PRACTICING: A SURVEY OF PIANO MAJORS AT THE UNIVERSITY OF OKLAHOMA

CHAPTER I

Introduction

For any pianist who desires to play the piano well, there is no substitute for practice. Paderewski has been quoted as stating: "If I omit my practice for one day, I know the difference; if I miss it for two days, the critics know it; and if I miss it for three days, the audience knows it."[1] Efficient and perceptive daily practice is essential for musical progress.

However, many individuals misunderstand the nature of practice. In order for practice to be effective, it must have certain qualities. Frances Clark states:

> Students often think they are practicing when they play a passage, stopping to correct mistakes four or five times; then, on the next day's practice, stop to correct mistakes three or four times; the next day, two or three times, and so on, until they finally play the passage without a mistake. A student who practices this way has not formed the habit of playing the passage correctly but only the habit of making fewer mistakes each day. The playing has improved, of course, but the practice habit is to make mistakes (and correct them).[2]

---

[1] Julia Broughton, *Success in Piano Teaching* (New York: Vantage Press, 1956), 28.

[2] Frances Clark, *Questions and Answers: Practical Advice for Piano Teachers* (Northfield, IL: The Instrumentalist Company, 1992), 156.

According to Clark, whether practice makes perfect or not depends on the quality of the practice; and the quality of the practice depends largely on the practice habits a student has formed and continues to develop.[3] That is to say, the quality of a student's practice determines the rate and extent of his or her musical progress.

Hence, what influences the quality of practice? Before attempting to answer questions regarding the quality of practice, the nature or goals of practice should be discussed. Naturally, practice involves repeated physical or muscular movements to acquire accuracy, and acquiring accuracy in performance is an important goal. Execution of musical interpretation is an additional goal. Listening while practicing, knowledge of performance practice and analysis, and critical thinking are essential components of playing musically. Next, all types of learning involve the memorization process in every moment, and memorization of music is also an important goal in practice. Lastly, acquiring the competence to perform in public is another essential goal of practice.

Significant factors that can influence the quality and effectiveness of practice include students' attitudes toward dealing with the relationship between practice and their lives, goal-oriented practice, students' understanding of their own learning styles, utilization of proper and effective practice strategies, and attentiveness and concentration skills. Further, time management skills, practice environment, and amount of time spent practicing are also important. Most of these factors have been described in the literature and will be discussed later.

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[3] Ibid.

Purpose of the Study

What information do piano majors need the most from their teachers? Perhaps a central issue is for teachers to help with students' practice. This study has two purposes. First, it examines piano majors' views on practice and identifies some misconceptions they hold about practice. Second, this study describes various kinds of information students need regarding practice.

This study focuses on University of Oklahoma piano majors' views toward practicing the piano, though a sufficiently large population of students and faculty instructors exists for broader generalizability. This initial study is designed to collect information regarding the students' understanding of the nature of practice and their utilization of practice strategies, as well as to provide direction for future studies with greater generalizability. Information has been gathered through a questionnaire in order to examine:

What points comprise piano majors' understanding of the nature of practice?

What specific practice strategies do piano majors know, and how do they utilize those strategies in practice?

What do piano majors know about their own personal learning styles?

How do piano majors set their goals?

How do piano majors plan their practice?

How do piano majors motivate themselves?

Need for the Study

The current research regarding practice in musical study is substantial. Controlled research, observation, interviews, case studies, questionnaires, and literature reviews all provide significant insight. As a result of this research, we know how successful pianists think and prepare for their performances. From this knowledge, we can predict how student pianists should practice to be most effective.

Despite the mass of research regarding practice, however, no study exists on how students think about their practice or how they understand the nature of practice. Students who understand the nature of practice and who know the kind of information they need in order to practice effectively are more likely to do so. Thus, this study aims to identify students' attitudes toward and understanding of practice. The basic premise of this study is that if students have correct mental attitudes toward and appropriate understanding of practice, they will achieve a certain level of improvement in their future performance, even if they do not practice for long periods or if they do not practice properly at the present.

This study may serve as a pilot study for future research on practice. As such, it will provide valuable information for the development of further research. Participation in this study will provide an opportunity for students to think about their practice habits and strategies seriously. Moreover, the findings of this study will provide suggestions for teachers to guide students toward productive practice.

Procedures of the Study

This study involved sixteen piano major students in residence during the Spring 2001 semester at the University of Oklahoma. A student at the University of Oklahoma considered to be a piano major is one who is currently enrolled and has declared piano as his or her major emphasis in performance or performance and pedagogy degree. During spring 2001, this included twenty-two students in the degrees BM (Piano 2020 and 4020), MM (Piano 5020), and DMA (Piano 6020). Through a research questionnaire that these individuals completed, the researcher examined the piano majors' understanding of the nature of practicing the piano and their knowledge and utilization of practice strategies. The questionnaire was pilot-tested by a former faculty member at the University of Oklahoma and three Ph.D. students. The revised questionnaire was administered to the participants in person, via departmental mail, or by postal mail, and students were given the option of remaining anonymous. Sixteen of the surveys were returned in time to be included in the analysis, for a response rate of 72.73%.

Design of the Questionnaire

Items in the questionnaire are based upon indications and recommendations from related literature and the researcher's background. Questions are all designed to examine students' understanding of the nature of practicing the piano. The first question is provided to gather general information about the participant, and the seven subsequent groups of questions are designed to explore practice time,

motivation, and goal-setting; the nature of practice; conscious practice; practice organization and pacing; utilization of practice strategies; understanding of individual learning styles; and related reading to practice as well as students' general thoughts on practice.

The questions were developed according to the instructions in the survey research chapter from the text, *Introduction to Research in Education* by Donald Ary, Lucy C. Jacobs, and Asghar Razavieh.[4] The survey instrument includes open-ended questions, scaled items, and check lists. The following sections I through VII describe the foci of the questions.

I. Practice Time, Motivation, and Goal-Setting

Backhaus believes that if goal-oriented practice becomes a natural habit, it can be expanded into one's life when one needs to do problem-solving. She suggests in her book,

1) Practice should always be undertaken with a goal in mind and these goals should be broken into lifetime, ten years, five years, one year, and three month goals. Moreover, it may be of more benefit to choose one's top six goals and number them in order of importance.
2) Think of your resume and visualize who and what you can become, and visualize every detail and then lay out a plan on a sheet of paper. Feel free to dream big.
3) Give yourself a reward.[5]

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[4] Donald Ary, Lucy C. Jacobs, and Asghar Razavieh, *Introduction to Research in Education*, 5th ed., (Fort Worth, TX: Harcourt Brace College Publisher, 1996).

[5] Patricia D. Backhaus, *Creative Practice: A Guide to Achieving Musical Success* (Waukesha, WI: VCS Publishing, 1995), 1-4.

The first question in this section is for identifying participants' academic level, and the following eight questions deal with practice time, motivation, practice scheduling, and goal-setting.

II. Nature of Practice

The ultimate goal of practice is not merely to achieve perfection or accuracy but to present convincing musical ideas. Moreover, there is a correlation between one's musical growth and his or her life, and as Bernstein asserts, in *With Your Own Two Hands,* "productive practice is a process that promotes self-integration."[6] However, many students do not accomplish musical growth effectively. According to Payne, "poor practice often results from misunderstandings about the nature of practice."[7] Two questions within this category of the questionnaire are directed at students' understanding of the nature of practice. An additional question asks for students' opinions regarding six misconceptions about practice that Hu discusses in the thesis, "How to Practice in an Efficient Way":

1) Practice is essentially a physical activity.
2) The most important goal of practice is the elimination of mistakes.
3) Repetition provides a direct route to a fine performance.
4) Fingers should be the focus of piano technique.
5) The level of expertise achieved is directly related to the amount of practice undertaken.
6) A good piano performance is possible and appropriate only for special students, namely, the so-called talented.[8]

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[6] Seymour Bernstein, *With Your Own Two Hands: Self-Discovery Through Music* (New York: G. Schirmer, Inc., 1981), 9.

[7] Donald Payne, "Teaching Students to Practice," *The Piano Quarterly*, 132 Winter 1985-1986, 27.

[8] Shu-Chen Hu, "How to Practice in an Efficient Way" (M.M. thesis, University of North Texas, 1999), 22-28.

III. Conscious Practice

According to Bolton, the saying "Think ten times and play once" was hung over Liszt's piano for all of Liszt's pupils to see.[9] Playing musical works is an intentional action, and actions must be determined by conscious purposes. Bolton also said, "Perform always, even when sight-reading. Always express something and never just 'run through.'"[10] Six of the nine questions in the section of the questionnaire on conscious practice survey students' awareness of what they are doing while practicing, including listening and experimentation. Three of the nine questions are provided to explore students' ideas on research or reading about the music they play.

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[9] Hetty Bolton, *How to Practice: A Handbook for Pianoforte Students* (London: Elkin & Co. Ltd., 1937?), 6.

[10] Ibid., 32.

IV. Practice Organization and Pacing

According to several teachers and researchers, such as Parsons,[11] Santana,[12] and Hu,[13] structured practice is effective. Parsons recommends seven segments of practice in his book:

1) Technical work.
2) The new piece.
3) The playing piece.
4) The substitute (to replace the present playing piece before it becomes stale).
5) A half-hour review (devoted to carefully reviewing the pieces to be kept within reach for use at short notice).
6) Another half-hour review (devoted to one important piece at a time).
7) Free playing from memory.[14]

Four questions in this section concern students' practice routines and pacing of practice.

V. Utilization of Practice Strategies

According to Sandor, "practice involves phases of learning, such as the reading of a piece, searching out its meaning, and its memorization."[15] In each phase, students should strive for maximum efficiency with minimum effort.

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[11] Albert R. Parsons, *The Science of Pianoforte Practice: An Essay on Proper Utilization of Practice Time* (New York: G. Schirmer, 1886).

[12] Elwin L. Santana, "Time-Efficient Skill Acquisition in Instrumental Music Study" (Ph.D. diss., Florida State University, 1978).

[13] Shu-Chen Hu, "How to Practice in an Efficient Way" (M.M. thesis, University of North Texas, 1999).

[14] Parsons, 26.

[15] Gyorgy Sandor, *On Piano Playing: Motion, Sound, and Expression* (New York: Schirmer Books, 1981), 183.

Practice without previously thinking through strategies is just a matter of trial and error through mindless repetition. The first and the last questions in this section view students' utilization of specific strategies. The remainder of the questions deal with memorization, audiotaping of practice sessions, the use of performance models, and self-teaching.

VI. Understanding of Individual Learning Styles

If students know their own learning styles, have knowledge of general learning theories, and utilize them in their practice, more effective and productive practice can be achieved. Four questions in this section are designed to explore whether students know their own cognitive and sensory learning styles and their personal styles of concentration. Two questions are used to examine their awareness of their performance weaknesses that could result from inappropriate or ineffective ways of practice and to examine efforts to improve their practice efficiency and effectiveness.

VII. Reading Related to Practice and Students' General Thoughts on Practice

The six closing questions examine students' general thoughts on practice. These include two questions to diagnose whether students know the benefit of reading about practice strategies. The last question asks students for additional comments regarding the survey itself.

Presentation and Interpretation of the Data

In Chapter Three, the purpose of each question will be discussed, and the responses of students will be presented and analyzed at three levels of study: undergraduate, masters, and doctoral. Answers to closed-ended questions will be presented with percentages, and answers to open-ended questions will be quoted in their entirety. Categorization and analysis will be included where appropriate. The analysis will include: 1) comparisons of undergraduate students' views regarding practice to those of graduate students; 2) comparisons of students' views on practice to experts' statements about effective practice strategies; 3) the types of information that students expect from their teachers; 4) and identification of practice issues that need further research.

Limitations of the Study

This study is limited to piano majors at the University of Oklahoma in Norman during the Spring 2001 Semester. This study does not involve observation of actual practice sessions, and the findings from the collected data may differ from the participants' actual practice habits. According to Geringer and Kostka, agreements between verbal and actual behaviors are frequently within the range of .40 and .60, thus indicating only moderate correlation.[16] This study focuses more on students' attitudes toward practicing than on their detailed practice reality.

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[16] John M. Geringer and Marilyn J. Kostka, "An Analysis of Practice Room Behavior of College Music Students," *Contributions to Music Education* 11 (Fall 1984): 24.

Organization of the Study

Chapter One includes the purpose of the study, need for the study, procedures of the study, design of the questionnaire, presentation and interpretation of the data, limitations of the study, and the organization of the study. Chapter Two reviews literature concerning piano practice. Chapter Three presents and interprets the data collected from the questionnaire. Finally, Chapter Four includes a summary, conclusions, and suggestions for further study. Appendices include the questionnaire itself, piano major cover letter, survey questions by topics, pilot test cover letter, additional participants' comments and permission to conduct research.

CHAPTER II

Related Literature

Students often believe that the only way to make musical progress is to take lessons from a good teacher. While a good teacher is important, several studies have determined practice to be a requisite of musical study. Hence, some music educators have studied the role of effective practice in musical progress. Further, Robert Pace once said, "Practicing is an art in itself."[17] In the first part of this chapter, selected books that deal with piano practice will be reviewed in chronological order. In the second part, dissertations, theses, and articles will be discussed.

Books on Practice

Hetty Bolton's handbook, *How to Practice* (1937?), promotes helpful concepts on practice.[18] In chapters one and two, she stresses clear thinking and mental control while practicing. Later, she talks about developing a sense of rhythm. In chapter four, she deals with listening and says, "We must aim not only at listening to our imagination for what we want, but we must listen also with our physical ears to what we get."[19] In chapter five, her discussion centers on sight-reading. Chapter six is about interpretation, and in chapter seven, she summarizes

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[17] Robert Pace, "Productive Practicing," *Clavier*, 31 July/August 1992, 17.

[18] Hetty Bolton, *How to Practice: A Handbook for Pianoforte Students* (London: Elkin & Co., Ltd., 1937?).

[19] Ibid., 21.

her ideas on practice with eleven important methods in practicing such as "Think before starting" and "Make a note of all you have learnt at each lesson." At the end of the book, three appendices on structured practice are included.

Gerald D'Abreu considers practicing the piano as a kind of study. *Playing the Piano with Confidence* (1964) covers 102 categories of issues, such as approach to study, technique, touch, expression, interpretation, memory, learning a new work, and performance.[20] In each category, the author briefly describes the specific issue, providing a helpful resource for students whenever they have questions on that problem. In sum, the author suggests that if students have correct mental attitudes and if their practice is economically planned, their study may be profitable.

In the first part of *The Art of Piano Playing* (1967), George Kochevitsky reviews historical theories of piano technique.[21] The historical reviews include the finger school, the anatomic-physiological school, and the psycho-technical school. In part two, he deals with the central nervous system and piano playing. In part three, he discusses problems related to piano playing and teaching and summarizes his ideas on practice, saying "Comprehension, discipline, patience and sheer grit play a decisive role in efficient practicing. The best indication of real progress is the student's independent work."[22]

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[20] Gerald D'Abreu, *Playing the Piano with Confidence: An Analysis of Technique, Interpretation, Memory, and Performance* (New York: St Martin's Press, 1964).

[21] George Kochevitsky, *The Art of Piano Playing: A Scientific Approach* (Evanston, IL: Summy-Birchard Company, 1967).

[22] Ibid., 51.

Seymour Bernstein discusses the mental and emotional aspects of practice. In the first part of *With Your Own Two Hands* (1981), he suggests that practice demands a continuous coordination of reason and emotion through correlation between the pianist-self and the person-self.[23] Furthermore, he asserts that, "productive practicing is a process that promotes self-integration."[24] In the second part of the book, he discusses techniques, listening, and choreography, and in the last part he deals with fulfillment through performance, as well as with musical memory and nervousness. Primarily, he suggests that we learn music by synthesizing our feelings, thoughts, sensory perceptions, and physical coordination, and that this synthesis can enrich our lives.

In *Developing Piano Performance* (1981), Max Camp examines piano teaching and playing from three different aspects: philosophical, historical, and psychological.[25] In chapter one, he briefly describes his philosophical view of performance pedagogy. In chapter two, he reviews historically several master teachers' teaching styles, and in chapter three, he explores piano study and developmental theories of learning. The primary concern of this book is to guide teachers in the fullest possible development of students' musical potential; however, the book is very informative for college students to read for their own musical growth.

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[23] Seymour Bernstein, *With Your Own Two Hands: Self-Discovery Through Music* (New York: G. Schirmer, Inc., 1981), 7.

[24] Ibid., 9.

[25] Max W. Camp, *Developing Piano Performance: A Teaching Philosophy* (Chapel Hill, NC: Hinshaw Music, Inc., 1981).

William Newman discusses the fundamental problems that could be experienced by every piano student and teacher. In Newman's *The Pianist's Problems* (1984), the first five chapters deal with the four main problems pianists have: musicianship, technique, practice, and performance.[26] Then, in chapter six, he suggests nine steps for learning a new piece. In the last chapter, he discusses sight-reading and learning by intuition and imagery. The book is written in nontechnical language, and some illustrations are provided; thus, it is good for college freshmen to read to increase their basic understanding of general musicianship and practice. The author's basic goal is to help students help themselves.

Madeline Bruser takes a slightly different approach in her book, *The Art of Practicing* (1997).[27] She maintains that tension and inefficient techniques stem from mental and emotional attitudes towards practice. She recommends ten steps to cultivate ideal attitudes. First, she suggests stretching, settling down in the practice environment, tuning into one's heart, and allowing curiosity to guide practice. Finally, she encourages students to recognize three styles of struggle (exaggerated passion, avoidance, and aggression), drop preformed attitudes and be simple, apply listening techniques, allow spontaneous insight, and pay attention to the sensations of touch and movement. In chapter six, "Basic Mechanics," Bruser

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[26] William S. Newman, *The Pianist's Problems: A Modern Approach to Efficient Practice and Musicianly Performance*, 4th ed. (New York: Da Capo Press, Inc., 1984).

[27] Madeline Bruser, *The Art of Practicing: A Guide to Making Music from the Heart* (New York: Bell Tower, 1997).

deals with body mechanics, showing postures and hand positions for different instruments.

In *Mental Practice and Imagery for Musicians* (1999), Malva Freymuth focuses on practical mental practice.[28] In chapter one of the book, she describes her experience in the development of mental practice strategies for herself. She ends the chapter with the comment, "Keep in mind that mental skills need practice and maintenance to retain their effectiveness."[29] In chapter two, she describes rudimentary principles of mental practice. She asserts that the goal of practice is the cultivation of desirable habits and the elimination of undesirable ones. Further, she suggests a three-step practice loop of mental projection, physical practice, and mental recall in daily practice.[30] In chapter three, she says,

> Effective mental practice depends upon a high level of sensory awareness. The more conscious you are of sensory feedback while playing, the more clearly you can imagine playing. In turn, the more vivid the mental work becomes, the more powerfully it can influence playing and performance.[31]

In chapter four, Freymuth explores four primary categories of mental practice and their effects: strategies for reinforcing cognitive aspects of a skill, mental practice during different stages of learning, physiological aspects of mental practice, and mental pre-performance strategies. In addition, she says, "Mental practice reinforces the cognitive aspects of musical learning by heightening physical

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[28] Malva S. Freymuth, *Mental Practice and Imagery for Musicians: A Practical Guide for Optimizing Practice Time, Enhancing Performance, and Preventing Injury* (Boulder, CO: Integrated Musician's Press, 1999).

[29] Ibid., 20.

[30] Ibid., 26.

[31] Ibid., 33.

awareness, strengthening sequential memory, and training analytical skills."[32] Later, she explores internal and external perspectives, manipulating the tempo, miming, eliminating negative mental representations, and imagery for musical and technical inspiration as mental practice strategies. In Appendix B, she presents relaxation techniques such as meditation, autogenic training, biofeedback therapy, yoga, deep breathing exercises, progressive muscle relaxation, and guided visualization. The bibliography on mental practice at the end of the book provides helpful references for further research.

Dissertations, Theses, and Articles on Practice

Dissertations, theses, and articles on musical practice are categorized here into two groups. Some researchers focus on practice as a learning process, and they discuss learning strategies in music. Others have researched a variety of subjects such as mental practice, listening, time management, memorization, and organized practice.

Learning Strategies

Music educators who emphasize practice as a learning process have researched general learning strategies in musical study. For example, several researchers have explored holistic and partial learning styles through behavioral observations and controlled experiments. The following reviews are arranged chronologically.

In 1928, Roberta Brown, in an article for the *Journal of Experimental Psychology*, compared whole, part, and combination methods for practicing the

[32] Ibid., 67.

piano.[33] She concluded that the whole method, which involves playing a piece from beginning to end without stopping to make corrections, was the most efficient practice method in two of the three score sets that she assigned to the participants. In contrast, the part method, which involves three repetitions of every four measures in practicing, was the least efficient of all. Finally, the combination method, in which the subjects played a piece from beginning to end without stopping and then repeated all measures that had errors an equal number of times, was the most efficient only in the easiest set of the three pieces. Brown does not clearly describe the participants in the study, however based on the pieces that were given to them, such as a Mozart sonata and pieces from Schumann's Scenes from Childhood, one could deduce that they were probably intermediate piano students.

In 1978, Miklaszewski observed a single pianist's four practice sessions and reported his findings in an article in the *Psychology of Music*.[34] The participant was a male piano student at the Chopin Academy in Poland, and the student chose *Feux d'Artifice* by Claude Debussy for this study. The student's practice sessions were videotaped, and the first session was followed by an audio-recording of the pianist's comments on his practice at the session. The distribution of practice passages, as well as practice activities and goals of the activities as reported by the pianist watching himself on the videotape, were subsequently analyzed. The

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[33] Roberta W. Brown, "A Comparison of the 'Whole', 'Part', and 'Combination' Methods of Learning Piano Music," *Journal of Experimental Psychology* XI (1928): 235-47.

[34] Kacper Miklaszewski, "A Case Study of a Pianist Preparing a Musical Performance," *Psychology of Music* 17 (1989): 95-109.

researcher found that the subject considered practice a problem-solving activity, and, as practice progressed, the length of the sections that he practiced increased. Further, this study demonstrated that the use of videotaping and the participant's comments on his own behavior can be a valuable research tool.

On the other hand, differences in practice between professional and student musicians were observed by Grusson (1981).[35] In the first part of her research, forty piano students and three artist pianists' practice sessions were observed, and their performance levels were evaluated according to the grade system of the University of Toronto's Royal Conservatory of Music. In the second part of the study, one pianist each from Grade II, Grade VI, and the artist level was selected to represent novice, intermediate, and artist levels. These three individuals were given carefully selected pieces according to their musical levels and were observed over ten practice sessions as they gained competence with their pieces. In addition to the observations, interviews were conducted concerning their knowledge of the strategies they used in their practice. Interviews corroborated that more experienced pianists tend to repeat larger and more complex musical units, that their practice tend to be more cognitively complex, and that they utilize a great variety of practice strategies.

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[35] Linda M. Grusson, "Rehearsal Skill and Musical Competence: Does Practice Make Perfect?" in *Generative Processes in Music: The Psychology of Performance, Improvisation, and Composition*, ed. John A. Sloboda (New York: Oxford University Press, 1988), 91-112. This study is originally a Ph.D. dissertation written in 1981.

In 1983, Sosniak examined unusual success in piano learning.[36] The participants for this study were twenty-one American concert pianists who had been finalists in major piano competitions. Semi-structured interviews were conducted with the pianists and with the parents of sixteen of the pianists. The purpose of the study was to search for regularities and recurrent patterns in educational histories of the pianists that might augment understanding of how successful learning in playing the piano is achieved. Sosniak describes several findings. First, most participants took an average seventeen years of studying, practicing, and performing before these pianists reached an exceptionally high level of learning. Secondly, they demonstrated three significant phases in the relationship between the pianists and the world of music: play and romance, precision and discipline, and generalization and integration. Third, parents' and teachers' support and motivation, rewards, and symbols of success encouraged the pianists. Finally, the pianists progressively adopted different views of who they were, what music making meant, and how it fit into their lives throughout the three phases. In a separate chapter, the researcher reports a concert pianist's story as an example case.

In 1984, Geringer and Kostka completed "An Analysis of Practice Room Behavior of College Music Students."[37] They conducted 2,000 observations of

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[36] Lauren A. Sosniak, "Successful Learning: Becoming an Exceptional Concert Pianist" (Ph.D. diss., Universty of Chicago, 1983).

[37] John M. Geringer and Marilyn J. Kostka, "An Analysis of Practice Room Behavior of College Music Students," *Contributions to Music Education* 11 (Fall 1984): 24-27.

practice sessions with the help of trained observers over a period of eight weeks at the University of Texas, Austin. Observations were conducted through glass panels in practice room doors, and students did not know they were being observed. The observed activities were divided into performance activities and nonperformance activities, which included reading, writing, looking at scores, getting ready, sitting, speaking, resting, breathing, and stretching. The data indicate that students were engaged in performance behavior for 72 percent of the observation period.[38]

In his 1986 dissertation, "Piano Performance as a Heuristic Process with Appendix," Hepp asserts that piano performance is a complex problem. He suggests that the superior technical achievements of concert pianists are a result of their use of heuristic processes of problem-solving in practice.[39] In order to support his idea, Hepp quotes famous pianists' comments on practice, and he asserts that concert pianists prefer to practice the interpretation of music.

On the other hand, Hallam (1995) interviewed twenty-two orchestral instrument players and tried to find relationships between psychological models of adult learning and musical learning as well as between intellectual development and musical learning.[40] The statements by the players in the interview were examined and categorized first in relation to Pask's learning styles, i.e., operation,

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[38] Ibid., 25.

[39] Christopher M. Hepp, "Piano Performance as a Heuristic Process with Appendix: Implications of the Heuristic Process for Piano Instruction" (D.M.A. diss., University of Colorado, 1986).

[40] Susan Hallam, "Professional Musicians' Approaches to the Learning and Interpretation of Music," *Psychology of Music* 23 (1995): 118-28.

comprehension, and versatile learning.[41] In addition, statements were categorized on the basis of the musical operationalisation of Perry's scale, which involves nine levels of intellectual development.[42] Hallam refers to musical operation learners as intuitive serialists and musical comprehension learners as analytic holists. She suggests that analytic/holistic or versatile learners can most reliably attain the highest level of intellectual development[43] and recommends that teachers need to know their pupils' preferred learning styles. Then, she suggests, teachers need to introduce students to different learning styles to give more variety to their learning.

Hu (1999) summarized the nature of practice discussed in the literature, emphasizing the imaginative and mental side of practice.[44] In the last chapter, Hu recommended strategies toward effective practice, including preparation, setting goals, practice schedule, practice routines, problem-solving, and repertoire maintenance. She also provided five stages of an ideal practice session which include warm-up, mental assessment, technical and musical development, run-through, and performing. Forty-three great pianists' thoughts and viewpoints on practice are quoted in the appendix.

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[41] G. Pask, "Styles and Strategies of Learning," *British Journal of Educational Psychology* 46 (1976): 128-148; quoted in Susan Hallam, "Professional Musicians' Approaches to the Learning and Interpretation of Music," *Psychology of Music* 23 (1995): 113.

[42] W. G. Perry, *Intellectual and Ethnic Development in the College Years: A Scheme* (New York: Holt, Rinehart and Winston, 1970); quoted in Susan Hallam, "Professional Musicians' Approaches to the Learning and Interpretation of Music," *Psychology of Music* 23 (1995): 113.

[43] Hallam, 121.

[44] Shu-Chen Hu, "How to Practice in an Efficient Way" (M.M. thesis, University of North Texas, 1999).

Miscellaneous Practice Topics on Practice

In this section, topics concerning memorization, mental practice, practice reports, organized practice, practice time, transformational practice, teachers' instruction on practice, and listening while practicing are reviewed chronologically.

Rubin-Rabson produced seven studies over a period of years on the psychology of memorizing piano music in the *Journal of Educational Psychology*. First, in "A Comparison of the Unilateral and Coordinated Approaches" (1939), four different practice conditions with various combinations of unilateral (separate hands) and coordinated (hands together) practice were compared.[45] The participants were thirty-six music students from music schools in New York City in 1937. The researcher concludes that unilateral trials preliminary to coordinated trials produce greater stability and clarity in the learning of piano material. Next, in "A Comparison of Massed and Distributed Practice" (1940), Rubin-Rabson examined three different practice approaches: one massed practice condition (ten trials for each hand and ten trials for both hands) and two distributed practice conditions (one condition of two practice sessions in one day, one hour apart, and the other of two practice sessions in two days, twenty-four hours apart).[46] Massed practice was determined to be less efficient in this study.

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[45] Grace Rubin-Rabson, "Studies in the Psychology of Memorizing Piano Music I: A Comparison of the Unilateral and Coordinated Approaches," *Journal of Educational Psychology* 30 (May 1939): 321-45.

[46] _____, "Studies in the Psychology of Memorizing Piano Music II: A Comparison of Massed and Distributed Practice," *Journal of Educational* Psychology 31 (April 1940): 270-84.

Rubin-Rabson examined several other factors affecting memorization. For example, in "A Comparison of the Whole and the Part Approach" (1940), she compared whole and part approaches in memorizing music.[47] The part approach showed stronger results in this research. Furthermore, in "The Effect of Incentive" (1941), she compared the effects of verbal exhortation, cash incentives, and free learning conditions as approaches to memorizing music with nine twenty- to twenty-six-year old musicians.[48] No significant differences were found.

Later, in "A Comparison of Pre-study Periods of Varied Length" (1941), the variable Rubin-Rabson investigated was the length of analytical pre-study to test the efficiency inherent in study periods of various lengths.[49] Nine adult musicians participated in the study, and three-, six-, and nine-minute-long pre-studies were assigned to the subjects. Nine compositions, ranging from five to eight measures in length, were given to the participants, and they were told that when time was called they would write the piece from memory. Then, the learning was continued at the keyboard. Results indicated that doubling the preliminary study time significantly reduced the number of trials at the keyboard and that tripling the time was not more efficient than doubling the time.

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[47] _____, "Studies in the Psychology of Memorizing Piano Music III: A Comparison of the Whole and the Part Approach," *Journal of Educational Psychology* 31 (September 1940): 460-76.

[48] _____, "Studies in the Psychology of Memorizing Piano Music IV: The Effect of Incentive," *Journal of Educational Psychology* 32 (January 1941): 45-53.

[49] _____, "Studies in the Psychology of Memorizing Piano Music V: A Comparison of Pre-study Periods of Varied Length," *Journal of Educational Psychology* 32 (February 1941): 101-12.

Next, in "A Comparison of Two Forms of Mental Rehearsal and Keyboard Overlearning" (1941), Rubin-Rabson experimented with three different combinations of practice organization using nine adult participants. The practice conditions were: 1) five trials of practice, then four minutes of mental practice followed by practicing at the keyboard to complete the learning of a piece; 2) the complete learning of a piece at the keyboard, followed by four minutes of mental rehearsal; and 3) completing learning of a piece at the keyboard, then four minutes of mental rehearsal followed by four minutes of practice at the keyboard.[50] In the first condition, the group demonstrated an advantage for retention when evaluated immediately after the first learning as well as at the session two weeks later.

Finally, in "A Comparison of Three Degrees of Overlearning" (1941), Rubin-Rabson examined the effects of continuing to practice or "overlearning" after attaining a certain level of learning.[51] Compositions eight to ten measures in length were given to the participants. The results failed to reveal any significant differences among 50 percent, 100 percent, or 200 percent of overlearning for retention of memorized piano music.

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[50] _____, "Studies in the Psychology of Memorizing Piano Music VI: A Comparison of Two Forms of Mental Rehearsal and Keyboard Overlearning," *Journal of Educational Psychology* 32 (November 1941): 593-602.

[51] _____, "Studies in the Psychology of Memorizing Piano Music VII: A Comparison of Three Degrees of Overlearning," *Journal of Educational Psychology* 32 (December 1941): 688-96.

In a 1972 study, Zurcher observed forty-three beginning fourth-, fifth-, and sixth-grade brass instrumental students in Baldwin, NY.[52] A recorded model was given to the students as supportive material to facilitate practice. He reported in his article that model-supportive practice is more effective than traditional practice and that the amount of practice may not be the determining factor to increase musical achievement.

In a different study, Wagner (1975) examined the use of practice reports.[53] Forty-eight music students were randomly selected and assigned to one of four groups. The students chose their own music to practice for this study. The variables of this study were different frequencies of reporting and different weeks when a practice report was completed. The researcher designed a practice report form, and pre- and post-tests of performance were scored by three judges to evaluate the effect. The results indicate that all groups improved over the experimental period of six weeks, and there was no significant difference among the groups.

In a 1978 study, Santana designed a practice method to investigate time-efficient skill acquisition in instrumental music study and evaluated it through a

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[52] William Zurcher. "The Effect of Model-Supportive Practice on Beginning Brass Instrumentalists," in *Research in Music Behavior: Modifying Music Behavior in the Classroom*, eds. Clifford K. Madsen, R. Douglas Greer, and Charles H. Madsen Jr. (New York: Teachers College Press, 1975): 131-38.

[53] Michael J. Wagner, "The Effect of a Practice Report of Practice Time on Musical Performance," in *Research in Music Behaviour: Modifying Music Behavior in the Classroom*, eds. Clifford K. Madsen, R. Douglas Greer, and Charles H. Madsen Jr. (New York: Teachers College Press, 1975): 125-30.

series of individual and group experiments.[54] The emphasis of the method was on carefully planned progress, especially tempo goals. Wind instrumental students from junior high through university levels participated in this study. An étude was assigned to each student, and the researcher gave a planned tempo goal chart in practice sessions. The researcher asked the students to pay close attention to details of the étude before beginning practice and asked them to record errors that were made in practice. The purpose of recording errors was to provide information that enabled students to correct errors according to the causes, such as mechanical difficulty, reading errors, and simple off-task mistakes. To evaluate the effects of the practice method, participants' performances were scored by the number of errors in their final performances. The results of the study indicate that the students in the practice method group achieved better performance.

On the other hand, in his 1981 study, "The Structured Border Lesson," Kafer utilized the Watkins-Farnum Performance Scale to investigate the effectiveness of thirty-minute practice sessions immediately before and after private lessons for band instrumentalists.[55] The students for this study were all freshmen music majors who were majoring in clarinet, saxophone, flute, or trumpet. Immediate practice sessions made no significant differences in the improvement of performances during the forty-three days of the study.

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[54] Elwin L. Santana, "Time-Efficient Skill Acquisition in Instrumental Music Study" (Ph.D. diss., Florida State University, 1978).

[55] Harold A. Kafer, "The Structured Border Lesson: The Effectiveness of Controlling the Entry and Exit Environment of the Private Music Lesson" (Ph.D. diss, North Texas State University, 1981).

In a study on the effect of a distraction index, Madsen and Geringer (1981) selected forty-eight undergraduate music majors and divided them into two groups.[56] The participants chose their own music to practice, and the researchers asked the control group and the experimental group to keep records of their practice in a pre-designed log for an eight-week period. In addition to this instruction, the experimental group was given a distraction index, a list of possible types of distraction, in order to heighten participants' awareness of distraction four times during the experimental period. In order to evaluate the effect of the distraction index, the participants' performances were pre- and post-tested by three judges. According to the results, the distraction index functioned to increase both attentiveness and performance.

In another study, Ross (1985) examined significant differences between mental practice and physical practice.[57] He observed practice sessions of thirty trombonists from three colleges. The participants were placed into five experimental conditions: all physical practice, all mental practice, a combination of the two, mental practice with simulated slide movement of the instrument, and no practice. A combination of mental and physical practice was shown to be most effective in his study.

In 1987, Gunn summarized the historical evolution of technical concepts of playing the piano by literature study and by quoting important pianists' ideas on

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[56] Clifford K. Madsen and John M. Geringer, "The Effect of a Distraction Index on Improving Practice Attentiveness and Musical Performance," *Council for Research in Music Education* 66-67 (Spring/Summer 1981): 46-52.

[57] Stewart L. Ross, "The Effectiveness of Mental Practice in Improving the Performance of College Trombonists," *Journal of Research in Music Education* 33 (1985): 221-30.

practice.[58] In addition, the writer described two practice strategy charts derived from Amanda Vick Lethco's lectures in the last chapter of her thesis. Gunn's thesis is helpful as a review of the historical evolution of technical concepts of playing the piano and as an inspiration as a result of the inclusion of famous pianists' ideas on practice.

In her 1990 dissertation, Barry reported differences between free practice and structured practice.[59] Fifty-five brass and woodwind students in grades seven through ten were selected for this study. All students were assigned to either a free practice group or a structured practice group on the basis of cognitive style and sex. Each student had four practice sessions over a period of two weeks. A questionnaire was given before the first practice session, and all practice sessions were videotaped. In order to assess the effect of structured practice, each student's performance was evaluated by three judges. She offers an informative literature review on practice, individual differences, cognitive styles, and sex differences in chapter two of the dissertation, and in the last chapter she indicates that structured practice is an effective means of improving musical performance.

In an article in the *Psychology of Music*, "Biological Precursors of Musical Excellence"(1991), Sloboda and Howe reported on social and motivational influences on musical learning and development.[60] They interviewed forty-two

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[58] Sheila M. Gunn, "Tradition and Strategies for Productive Keyboard Practice" (M.M. thesis, University of Texas, Austin, 1987).

[59] Nancy Barry, "The Effects of Practice Strategies, Individual Differences in Cognitive Styles, and Sex upon Technical Accuracy and Musicality of Student Instrumental Performance" (Ph.D. diss., Florida State University, 1990).

[60] John A. Sloboda and Michael J. A. Howe, "Biographical Precursors of Musical Excellence: An Interview Study," *Psychology of Music* 19 (1991): 3-21.

ten- to eighteen-year-old students from a special school in England for musically gifted children as well as twenty of their parents. The interview instrument contained twenty questions, of which there were three questions related to practice. One question was about parents' involvement in practice at home. The majority of parents took some form of direct interest or regulatory role in practice at home. Another question centered on how to motivate daily practice. In actuality, a very small number of the gifted children were self-motivated. The third question related to practice was about numbers of practice hours. The highest was 560 hours per year and the lowest was 200 hours. As a result of this study, the researchers reported that the amount of practice time is not a reliable predictor of exceptionality.

In her 1992 dissertation, Galvan furthered Ross' idea on mental practice.[61] She studied the possible effectiveness of utilizing kinesthetic imagery in mental practice of keyboard skills for undergraduate music majors not pursuing a degree in piano performance. After reviewing the literature on imagery in sports performance, movement arts, and piano pedagogy, she briefly discussed three students' cases. In the last chapter, she recommends centering and relaxation procedures, self-talk procedures, and finally, stopping negative thoughts and replacing them with positive images as techniques for effective mental practice.

[61] Mary G. Galvan, "Kinesthetic Imagery and Mental Practice: Teaching Strategies for the Piano Principal" (D.M.A. diss. University of Miami, 1992).

On the other hand, Berr (1993) recommended transformational practice in his dissertation:

> Transformational practice techniques are exercises or procedures based on transformations of actual sections of repertoire . . . The first step involves recognition of a problem, then diagnosis of the problem in order to ascertain what kind of transformation will solve it. This is followed by actual practice of the transformations, then consolidating the original passage with the rest of the music.[62]

He explains the effectiveness of specific strategies, such as blocking, stopping practice, mistake practice, and impulse practice,[63] through literature study and presentation of examples.

In an interesting 1994 article, "Teaching Practice Strategies in the Music Studio," Barry and McArthur reported that "teachers' approaches to practice are not always consistent with the literature and that practice strategies endorsed by college teachers often differ from those used by teachers of pre-college students."[64] A survey was conducted that had twenty-six items on practice instruction designed to ascertain the extent to which studio music instructors teach certain practice strategies.

In his dissertation, "Listening While Performing" (1997), Williams examined music-listening processes that occur during actual performance of music.[65] Two

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[62] Bruce Berr, "Practice Techniques for Piano Based on Score Transformations" (D.M. diss., Northwestern University, 1993): 6-7.

[63] According to Berr (p. 81), impulse practice involves dividing up a piece or passage into very small groups. These small groups are immediately practiced up to tempo. Groups are combined to make longer groups, until finally the whole passage may be played easily at full speed.

[64] Nancy H. Barry and Victoria McArthur, "Teaching Practice Strategies in the Music Studio: A Survey of Applied Music Teachers," *Psychology of Music* 22 (1994): 44.

[65] David A. Williams, "Listening While Performing: Music Listening Processes as Revealed Through Verbal Reports of Wind Instrumentalists During Rehearsal" (Ph.D. diss., Northwestern University, 1997).

college juniors, two tenth-grade students, and two sixth-grade students were asked to wear microphones connected to cassette recorders for five rehearsals of their band ensemble. They were asked to stop playing and comment into the microphone as often as they wanted to describe what they were hearing and thinking when they were playing. In the interview after the rehearsals, the students listened to their taped comments and were asked to discuss what they said and what they were hearing at the time. Their 347 separate comments were divided into twelve sub-categories. In the post-interviews, the students reported that the process of this study made them listen more than they usually did. One of the suggestions that the researcher makes in the last chapter of the dissertation is that the reporting of listening and thinking processes during rehearsals should become a regular part of ensemble participation.

Summary

The review of the literature on practice reveals a number of issues in which researchers and pianists have been interested: general practice instructions, successful pianists' practice, differences between professional and student musicians' practice, students' practice room behaviors, and different learning styles in practice. Furthermore, literature regarding specific practice strategies such as transformation, mental practice, memorization, listening while practicing, use of practice reports, practice time, organized practice, and teachers' instruction on practice is included in this review. Methods used in the reviewed studies were

case studies, questionnaires, observations, controlled experiments, interviews, and literature research. Not all of the studies reviewed in this paper are conclusive or directly applicable to piano instruction; however, the following useful information can be deduced from them.

1) According to a work's difficulty, either holistic or a combination of holistic/serialistic approaches can be more useful in practice (Brown).
2) As a piece is practiced repeatedly, the fragments selected for attention become longer and the time assigned for each fragment becomes shorter (Miklaszewski).
3) More experienced pianists tend to repeat larger and more complex musical units and tend to utilize more varied strategies in practice (Grusson).
4) In order to achieve successful learning in piano study, pianists need to adopt different views of who they are, what music making is, and how to fit it into their lives in every moment (Sosniak).
5) Piano performance is a complex problem that can be solved by heuristic processes in practice (Hepp).
6) Students need to know their learning styles for effective practice (Hallam).
7) Students need to know specific information about what kinds of practice activities are most useful in order to ensure musical progress (Hu).
8) Generally approved learning strategies may influence the memorization of music (Rubin-Rabson).

9) Model-supportive practice (Zucher) and the use of practice reports (Wagner) are effective practice strategies.

10) Organized and systematic practice improves practice effectiveness (Santana and Barry).

11) The awareness of distraction in practice can improve efficiency of practice (Madsen and Geringer).

12) A combination of mental and physical practice enhances practice effectiveness (Ross).

13) The amount of practice time is not the only indicator of exceptional musical ability (Sloboda and Howe).

14) Techniques of centering and relaxation, self-talk, and stopping negative thoughts and replacing them with positive images help with effective mental practice (Galvan).

15) Transformational practice is effective (Berr).

16) Teachers' approaches to practice are not always consistent with each other (Barry and McArthur).

17) Listening should become a regular part of ensemble participation (Williams).

CHAPTER III

Presentation and Interpretation of the Data

Introduction

Chapter III presents data from the responses to the questionnaire (Appendix A) designed to explore piano majors' views on practicing the piano at the University of Oklahoma. The questionnaire was designed after reviewing related literature on practicing the piano and was based on the researcher's background. The questionnaire has seven sections with forty-eight questions. In this chapter, the data collected through the questionnaire and the interpretation of the data will be presented by sections.

The first draft of the questionnaire was pilot-tested before it was administered to each participant. One of the four participants for the pilot-test was a former piano faculty member at the University of Oklahoma, and three were Ph.D. students. The pilot-test participants were asked to evaluate the questionnaire for clarity, redundancy, ease of understanding, and format. They were asked to complete the pilot-test in ten days, and all of the questionnaires were returned. All participants provided valuable suggestions regarding the questionnaire's content and format. Three of the participants stated that the survey was long and time-consuming. Suggested revisions included adding a question, providing more space for answers, maintaining consistency of the response categories and of the format of questions, and rephrasing several questions. The length of time to complete the questionnaire

was also tested; it ranged from thirty to forty minutes for two students who did not participate in the final survey.

In accordance with the suggestions from pilot-testing and with information from further reading on survey construction,[66] the questionnaire was revised. For the final version, there were twenty-two participants expected. The questionnaires were conveyed to participants in person, via departmental mail, or by postal mail. Sixteen of the surveys were returned in time to be included in the analysis, for a response rate of 72.73%. Two questionnaires returned late were not included in the data. Five undergraduate (BM), six masters (MM), and five doctoral (DMA) students participated in this survey (Q 1).

Table 1.1
Academic level

Degree Program	Participants	Percentage
BM	5	31.25%
MM	6	37.50%
DMA	5	31.25%

Questionnaire data will be analyzed in two ways. Percentages and frequencies of response will be determined for those questions involving checklists and scaled items. Responses to open-ended questions will be categorized according to identification of category or will be quoted exactly as the participants wrote them. Each following section will describe each category of responses from the questionnaire.

[66] Peter H. Rossi, James D. Wright, and Andy B. Anderson, *Handbook of Survey Research* (New York: Academic Press, Inc., 1983).

Practice Time, Motivation, and Goal-setting (Q2-Q9)

In this section, eight questions (Q2-9) investigate the participant's practice time, motivation, and goal-setting. The first three questions on practice time were intended to capture the students' interest in participating in the survey.

Practice Time (Q2-4)

Questions 2 through 4 are related to students' practice time. Chopin recommended that an individual not practice more than three hours.[67] Leschetizky once said, "Four or, at the most, five hours a day of concentrated practice is sufficient."[68] Question 2 asks how many hours the participant practices each week. According to participants' responses, the approximate ranges of practice hours are ten to twenty-eight hours per week. DMA students practice less than MM and BM students do. Table 1.2 shows the responses.

Table 1.2
Practice hours per week

Hours	All (N=16)	BM(N=5)	MM(N=6)	DMA(N=5)
24-28 hours	2 (12.5%)	1	1	
21-23 hours	4 (25%)	2	2	
14-20 hours	5 (31.25%)	2	1	2
Less than 14 hours	5 (31.25%)		2	3

Question 3 gathered information about participants' satisfaction regarding the amount of their practice time. Thirteen participants (81.25%), including all BM

[67] Reginald R. Gerig, *Famous Pianists and Their Technique* (New York: Robert B. Luce, Inc., 1974), 165.

[68] Ibid., 274.

students, stated they mostly or unequivocally believe they practice enough to achieve their musical goals. Table 1.3 shows the responses.

Table 1.3
Adequacy of practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	1 (6.25%)	1		
Yes mostly	12 (75%)	4	5	3
No mostly	3 (18.75%)		1	2
No				

Three students (18.75%) stated they do not believe they practice enough to achieve their musical goals. Moreover, seven students responded with explanations as to why they cannot practice enough. A busy schedule was the most common reason given, and four out of the seven students who responded with explanations were DMA students. One MM student listed one other reason that was not provided in the response categories: "difficulty of accessibility to practice facilities." Also, one DMA student listed "family and other jobs" as a reason. Table 1.4 shows the responses regarding inadequacy of practice.

Table 1.4
Responses re inadequacy of practice

Response	All (N=7)	BM (N=1)	MM (N=2)	DMA (N=4)
Busy schedule	6	1	1	4
Lack of motivation	2		1	1
Accompanying responsibility	2		1	1
Accessibility to practice facility	1		1	
Family and other jobs	1			1

Question 4 gathered information about how many hours a week each participant thinks would be ideal for him or her. Seven participants (43.75%) think that twenty to twenty-five hours, which is the most common range, would be ideal for them to

practice per week, and four participants (25%) think that twenty-six to thirty hours would be appropriate. As opposed to the responses to Question 3, a comparison between participants' actual practice hours to their ideal ones reveal that fifteen participants (93.75%) actually think they need to practice more than they usually do. Only one BM student answered that the number of practice hours she or he usually practices would be ideal. In contrast, one DMA student suggested that she or he needs twice many hours as she or he usually practices. Table 1.5 shows participants' responses for the ideal amount of practice per week.

Table 1.5
Ideal amount of practice per week

Hours	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
35-40	2 (12.5%)	1		1
26-30	4 (25%)	1	3	
20-25	7 (43.75%)	2	2	3
15-18	3 (18.75%)	1	1	1

Arrau says that anyone desiring to become a pianist needs to practice six to eight hours a day,[69] while Rachmaninoff recommends two hours of practice in the morning and two hours in the afternoon.[70] However, it is important to consider each student's own best judgment of himself or herself as to whether he or she plans enough practice time.

[69] Shu-Chen Hu, "How to Practice in an Efficient Way" (M.M. thesis, University of North Texas, 1999), 84.

[70] Ibid., 77.

Motivation (Q5)

Learning can take place without motivation; however, motivation enhances the learning process. According to Pace, "being able to notice improvement augments motivation."[71] Equally important, Judy recommends keeping a musical logbook to build motivation and measure progress.[72] Question 5 asks students to list ways they motivate themselves to practice. According to the responses, having goals and listening to recordings or to peers' playing are the most common motivational techniques used. Other motivational techniques described are personal rewards; seeing progress; willingness to succeed; thinking about famous pianists; writing journals; thinking of parents' hard work; enjoyment of learning; performing in public; preparing recitals, master classes and competitions; teacher motivation; piano jury; new repertoire; boredom with current pieces; no distractions; and having a good lesson. Interestingly, one BM student said that motivation has never been a problem, while one DMA student said "daily duty" is what motivates him or her.

According to Kruth, there are two fundamental types of motivation: intrinsic motivation, which is characterized by psychological needs and desires; and extrinsic motivation, which is characterized by outside sources such as grades and rewards.[73] According to the responses, two students motivate themselves intrinsically, five do so extrinsically, and six motivate themselves both intrinsically and extrinsically. As mentioned in the previous paragraph, participants' responses reveal that they motivate

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[71] Robert Pace, "Productive Practicing," *Clavier*, 31 July/August 1992, 19.

[72] Stephanie Judy, *Making Music for the Joy of It: Enhancing Creativity, Skills, and Musical Confidence* (New York: Jeremy P. Tarcher/Putnam, 1990), 97.

[73] Edwin C. Kruth, *Motivation, Practice, Adjudication* (Kenosha, WI: G. Leblanc Corporation, 1988?), 3.

themselves in their own ways. However, more students need to know the value of intrinsic motivation. According to Clark, "intrinsic motivation comes from the music itself and from a student's direct and personal involvement with it."[74] Such motivation rewards students immediately. In doing so, students need their teachers' help. Only one MM student mentioned teacher motivation. Teachers should communicate with their students, help them define their achievable goals, provide specific instructions, and evaluate the results. The following are quotes from fourteen participants reflecting how they motivate themselves to practice:

1) Motivation has never been a problem. I visualize thunderous, standing ovations, and beautiful, swooning women. (BM)
2) I know that in order to be good at playing the piano it requires practice. I'm motivated by my self-goals – to be the best I know I can be, and also simply for the fact that showing up to lessons unprepared is no fun. (BM)
3) Sometimes I tell myself that I cannot go hang out with friends until I'm done practicing. That usually motivates me! I actually do enjoy practicing. If for some reason, my mind is not focusing, I never force myself to practice. In that situation I come back at a later time when I'm ready and focused. (BM)
4) Excitement at seeing pieces mature, willingness to succeed for me and my professor. (BM)
5) Always have a goal in every practice session. Writing a journal helps, too, as you can check back what you did yesterday and future reinforce [*sic*] on it. (BM)
6) Thinking about famous concert pianists and trying to be like him [*sic*]. Also, my parents spent quite a lot of money to let me study music so to repay their hard-earned money I try to please them (and myself). (MM)
7) Enjoyment of learning and performing publicly; recitals, master classes, competition; teacher motivation. (MM)
8) Many times, I find myself imagining a recital or concert in which I perform all the pieces I am currently working on. This desire to be able to perform my pieces is often enough to motivate me to learn and memorize my pieces. Other times, listening to friends play can inspire me to be diligent. Recordings by famous pianists often encourage me to want to practice, with the hopes that I will perform

[74] Frances Clark, *Questions and Answers: Practical Advice for Piano Teachers* (Northfield, IL: The Instrumentalist Company, 1992), 165.

as well as the artist in the recording. Strangely, boredom of my current piece can be a form of "negative motivation." I can become bored of a piece and want to practice and finish it just so I can work on a new piece. (MM)

9) I set goals for myself, either a recital or an important performance. Listening to recordings. For the love of playing music and having fun. (MM)
10) Set goals for learning/memorizing pieces. Listen to recordings. (DMA)
11) ? Daily duty. (DMA)
12) Recital; new repertoire; master class; piano jury. (DMA)
13) Set goals; prioritize pieces as to immediacy (realize what has to be accomplished by a certain date). Find quiet place and time with no distraction. Listen to recording or peer's playing! (DMA)
14) Listening to good performance (or attending); being inspired by a good lesson. (DMA)

Goal-setting (Q6-9)

Scheduling practice can motivate students. Question 6 asks whether students schedule their practice according to a consistent plan. Seven participants (43.75%) schedule their practice beforehand, and nine (56.25%) participants do not. Their responses, broken down by academic levels, are shown in Table 1.6.

Table 1.6
Practice plan

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	7 (43.75%)	3	2	2
No	9 (56.25%)	2	4	3

Among the seven students who schedule their practice, setting a daily minimum number of hours is a popular method. Bolton recommends a plan for the daily practicing of each piece, so that each day, students can feel they have gone one step

further.[75] Only one MM student said that he or she plans for the daily practice of each piece. The participants' responses are shown in Table 1.7.

Table 1.7
Practice plan description

Response	All (N=7)	BM (N=3)	MM (N=2)	DMA (N=2)
Daily plan for each piece	1		1	
Weekly plan for each piece	2	1		1
Setting a daily minimum number of hours	6	3	2	1
Setting a weekly minimum number of hours				

As noted in the responses to Question 5, having goals motivates students. Moreover, according to Locke and Bryan[76] as well as to Backaus,[77] practice is effective when it is goal-oriented. In Question 7, four participants (25%) said that they always have specific goals for practice sessions. Twelve participants (75%) said that they sometimes have such goals. Students need to be reminded more often to have specific goals in each practice session. Participants' responses are shown in Table 1.8.

[75] Hetty Bolton, *How to Practice: A Handbook for Pianoforte Students* (London: Elkin & Co., Ltd., 1937?), 31.

[76] Edwin A. Locke and Judith F. Bryan, "Cognitive Aspects of Psychomotor Performance: The Effects of Performance Goals on Level of Performance," *Journal of Applied Psychology* 50 (1966): 286-91.

[77] Patricia D. Backaus, *Creative Practice: A Guide to Achieving Musical Success* (Waukesha, WI: VCS Publishing, 1995), 1.

Table 1.8
Goals for practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Always	4 (25%)	2	1	1
Sometimes	12 (75%)	3	5	4
Not at all				

In Question 8, fourteen participants (87.5%) responded that they have in mind long-term goals in their piano learning, while two (12.5%) do not. Interestingly, the two students who responded that they have no long-term goals in mind are MM students. Table 1.9 shows participants' responses.

Table 1.9
Long-term learning goals

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	14 (87.5%)	5	4	5
No	2 (12.5%)		2	

Performing and teaching are the most common long-term goals described. The next goals mentioned are expanding repertoire and independent interpretation. Newman once said, "The guiding of the practice toward the day when the student can become his own teacher is the most important mission of the piano teacher."[78] Performing and teaching, the most common responses, might imply or include independent study or interpretation. However, students need to be more aware of the importance of independent study. Other interesting goals that participants mentioned include learning and growing to be as musical as possible, being able to express one's

[78] William Newman, *The Pianist's Problems: A Modern Approach to Efficient Practice and Musicianly Performance*, 4th ed. (New York: Da Capo Press, Inc., 1984), 94.

feelings through music, having fun and making beauty, and writing piano pieces. The following are fourteen students' comments about their goals in piano learning:

1) Performing all of my current pieces for adoring crowds, learning all the most famous, well-loved pieces and not "wasting" time with "boring," obscure works that no audience wants to listen to!! (BM)
2) My long-term goal is to always strive to my maximum abilities and become a great performer. My career goals will be performing and teaching piano at the college level. (BM)
3) I have goals to learn and grow to be as musical as possible. (BM)
4) Ability to learn pieces well, both technically and musically on my own. (BM)
5) Being able to express my feeling through music is my ultimate goal. (BM)
6) My goal is to not depend [*sic*] on my teacher's coaching, to start to learn piano independently, and to be a teacher to others. (MM)
7) To become a very good musician and skilled performer. (MM)
8) Learn and recognize about the important works; improve my playing ability; improve my ability to teach these pieces. (MM)
9) Ultimately, my goal as an MM student is to complete both my master's and doctoral work so I can teach piano at a major university. It would be ideal to concertize as well. (MM)
10) Goals of certain repertoire I want to play; performance goals (one solo recital/year and accompanying). (DMA)
11) Have fun and make beauty. (DMA)
12) Expand repertoire – to be able to teach a wide range of repertoire to children of all ages (especially college level). (DMA)
13) Recital performances; favorite pieces that I've always wanted to play; writing piano pieces. (DMA)
14) To be able to interpret a piece on my own. (DMA)

Question 9 explores students' views on the connection between their lives and musical learning. Eleven of the participants (68.75%) responded that there is a strong connection between their lives and their musical learning; four participants (25%) said that there is some connection, and one participant (6.25%) responded that she or he had not thought about it. Table 1.10 shows their responses.

Table 1.10
Life-music connection

Connection	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Strong connection	11 (68.75%)	3	4	4
Some connection	4 (25%)	1	2	1
No connection				
Never thought about it	1 (6.25%)	1		

Question 9 was designed according to the premise of Bernstein's idea that "productive practicing is a process that promotes self-integration."[79] Students may find connections between their lives and musical learning in many ways: reason for being, musical abilities applicable to other aspects of life, self-discipline, pouring out one's emotions when playing, therapy, enhancing understanding of life, beauty or enjoyment in life, and career. Students' responses reveal that most of them are either in the phase of "play and romance" or that of "precision and discipline."[80] They need to proceed to the final phase, "generalization and integration,"[81] in which they recognize that piano learning promotes self-integration and that the synthetic process in learning enriches their lives. The following are explanations of their lives and music are connected from fourteen participants:

1) Music is fun. It is a release. It is one of my most outstanding talents. It helps define who I am. People think of me as a nice guy, a smart guy, a Christian, and my friends frequently call me a "musical genius" (Ha!). (BM)
2) Music has always been a huge part of my life. Without it I don't know what I would do. Piano and my life have become so intertwined that they are really one. My musical learning enhances my life. What happens in my music life has a great impact on me

[79] Seymour Bernstein, *With Your Own Two Hands: Self-Discovery Through Music* (New York: G. Schirmer, Inc., 1981), 9.

[80] Lauren A. Sosniak, "Successful Learning: Becoming an Exceptional Concert Pianist" (Ph.D. diss., University of Chicago, 1983), 118.

[81] Ibid.

because it essentially is my life. (BM)

3) I find that I can memorize things (outside of music) very easily because of my musical training. Also, I have a good concentration level, which I believe is from my musical background. (BM)
4) Consistent practicing is about self-discipline. From practicing, you learn self-discipline and also to make music better [*sic*] and more fun. Music is all about fun making. I always enjoy playing. And honestly, my life is pretty much "being controlled" by the music I play. When I play well or have a good practice session, my day is bright and shiny. And learning music makes me a more disciplined person. Music is everything to me. (BM)
5) Playing piano makes me happy, and I sometimes pour out my emotions when playing. (MM)
6) When I'm not feeling well or I have something on my mind, then I'm distracted; I can't concentrate much or don't feel like practicing. (MM)
7) I have a great passion for music and to express music. Music learning is like a therapy for me. I usually forget problems. (MM)
8) Especially while being in school, my life revolves around my music-learning and degree. (MM)
9) I feel that as I gain a deeper understanding of music and its meaning, it enhances my understanding of life. (MM)
10) I believe that I have been blessed with a natural affinity and ability for music. I don't ever recall making a concrete decision of becoming a music major; it just seemed to happen. (MM)
11) Enjoy life through music. (DMA)
12) Always wanted a career in teaching piano and music theory. Career is part of my life. (DMA)
13) I can't say that "Music is my life," but it is a huge part of my make-up: I teach it and perform it in my profession, I share it and require it with my children. I prefer it and enjoy it in my leisure, but it does not control or direct my life. I study music because it enhances my work and play. (DMA)
14) I feel it encompasses almost every aspect of life in some ways and that I would not be complete without it. (DMA)

In sum, students' responses to Questions 2 through 9 reveal that students need information about efficient practice strategies and motivational techniques. Further, they need to have detailed practice goals for each practice session.

Nature of Practice (Q10-12)

According to Hu[82] and Bruser,[83] understanding the nature of practice can affect students' attitudes toward practice. The three questions in this section (Q10-12) seek to explore each participant's understanding of the nature of practice.

Elements for productive practice (Q10)

Question 10 asks participants to list the things that help them practice productively. Participants listed various elements. The most common response is having goals (68.75%). The next most common responses are having a proper practice environment (62.5%) and utilizing proper practice skills (37.5%). Memorizing (25%), analysis or score study (25%), having enough rest (25%), isolating difficult areas (18.75%), slow practice (18.75%), listening (18.75%), concentration (18.75%), and having fun (18.75%) are next. Participants' responses are categorized in Table 2.1 (their original comments can be found in Appendix F).

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[82] Shu-Chen Hu, "How to Practice in an Efficient Way" (M.M. thesis, University of North Texas, 1999).

[83] Madeline Bruser, *The Art of Practicing: A Guide to Making Music from the Heart* (New York: Bell Tower, 1997).

Table 2.1
Elements for productive practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Internal practice session elements				
Having reasonable goals	11	4	4	3
Specific practice skills and techniques	6	2	2	2
Analysis/score study/research/thinking	4			4
Memorizing	4		3	1
Isolating areas of technical difficulty on which to focus	3	1	1	1
Slow practice	3		3	
Listening	3	2		1
Warming up before practice	2		2	
Audiotaping practice and listening to it	2	1		1
Love of the playing piece	2		2	
Playing as if in performance	1	1		
Not just playing from beginning to end	1		1	
Not forcing memorization of unfamiliar piece	1		1	
Listening to model performances	1		1	
Use of metronome	1		1	
External practice session elements				
A room away from distractions/proper environment/in-tune piano	10	1	4	5
Enough rest/enough sleep/taking breaks	4		3	1
Concentration/mind engagement	3	1	1	1
Always having fun/no stress	3	1	1	1
Motivating lessons	2		1	1
Amount of time	2			2
Taping lessons	1	1		
Practicing during one's prime time	1	1		
Keeping a practice journal	1	1		
Frequent performances	1	1		
Positive attitude toward practice	1	1		
Not forcing practice	1		1	
Eating well	1		1	

Practice focus elements (Q11)

Question 11 asks on what elements students focus most strongly while practicing. The elements for which many students checked "always" include:

technical difficulties, character of the music, note accuracy, balance of voices, listening, interpretation, tone production, and learning notes. The elements for which more students checked "sometimes" include: authenticity, physical coordination, musical architecture, memorization, and tempo consistency. Sight-reading and improvising are the most neglected elements. MM and DMA students focus more on tempo consistency and physical coordination than BM students do. One BM student could not understand one of the response categories, musical architecture, and he or she wrote a question mark in the space provided. One MM student listed one other element, relaxation, which was not provided in the response categories. Table 2.2 shows the responses.

Table 2.2
Practice foci (N=16)

Element	Always (B/M/D)	Sometimes (B/M/D)	Never (B/M/D)
Technical difficulties	14 (5/5/4)	2 (0/1/1)	
Character of the music	13 (5/4/4)	3 (0/2/1)	
Note accuracy	12 (3/5/4)	4 (2/1/1)	
Balance of voices	12 (4/4/4)	4 (1/2/1)	
Listening to oneself	11 (4/4/3)	4 (1/2/1)	1 (0/0/1)
Interpretation	11 (4/3/4)	4 (1/2/1)	1 (0/1/0)
Tone production	10 (5/2/3)	6 (0/4/2)	
Learning notes	9 (2/5/2)	7 (3/1/3)	
Authenticity (Performance Practice)	5 (3/1/1)	11 (2/5/4)	
Physical coordination	4 (0/2/2)	10 (4/3/3)	2 (1/1/0)
Musical architecture	4 (2/2/0)	9 (2/2/5)	2 (0/2/0)
Memorization	6 (1/2/3)	8 (2/4/2)	2 (2/0/0)
Tempo consistency	6 (0/3/3)	7 (3/2/2)	3 (2/1/0)
Sight-reading		9 (4/1/4)	7 (1/5/1)
Improvisation		7 (4/1/2)	9 (1/5/3)
Relaxation		1 (0/1/0)	

Six misconceptions about practice (Q12)

In a master's thesis, Hu listed six popular misconceptions about practice.[84] Question 12 is based on the six statements that Hu suggested regarding physical practice, practice goals, repetition, technique, practice time, and talent. Tables 2.3 through 2.8 show students' responses to those six statements.

Superficially, practice seems to be merely a physical activity; however, physical activity alone is not enough to achieve musical progress. Pace once said in his article, "Practice is musical problem-solving."[85] Practice should be done as much in the head as in the hands. Table 2.3 shows students' responses to the statement that practice is essentially a physical activity.

Table 2.3
Practice: Essentially a physical activity

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Agree	5 (31.25%)	2	3	
Agree somewhat	5 (31.25%)	1	1	3
Disagree somewhat	5 (31.25%)	2	1	2
Disagree	1 (6.25%)		1	

While ten students (62.5%) agreed with the statement, their opinions are not entirely different from those who disagreed with the statement. All participants interpreted the statement in their own ways, as reflected in their written responses,

[84] Hu, 22-30.

[85] Pace, 17.

which made it clear that most of the participants agree that practice has both physical and mental aspects. Interestingly, one BM student mentioned creativity in practice. Fourteen participants provided their opinions regarding the statement that practice is essentially a physical activity. They are quoted as follows:

1) Sure, my back gets tired after practicing for solid hours, but practice is 95% mental. No doubt about it. (BM)
2) To practice effectively your whole body must work. It is a physical activity. (BM)
3) I think that practice is much more of a creative activity. It is physical, but I don't think that is the primary aspect of practice. (BM)
4) It is physical because of the use of hands and arms, but much is mentally fixing spots and interpretation. (BM)
5) Building up the stamina is essential. If you have learned all your music but don't have the stamina to play through it all. That's the point. (BM)
6) I don't think I need to work out in the gym because sometimes practicing wears me out. (MM)
7) Physical and intellectual. (MM)
8) It's a physical activity because one gets fatigued, which can ultimately lead to physical injury. (MM)
9) It is also mental and emotional. (MM)
10) This semester, I have learned to change my practice from primarily physical to primarily mental. (MM)
11) Practice has as much to do with mental concentration as physical coordination. (DMA)
12) It's also an aural and mental activity. That is if one listens to and thinks about the music [to which] one [is] listening. (DMA)
13) It involves mind and heart. (DMA)
14) Also mental. (DMA)

The next statement was chosen to examine students' views on goals in practice. Table 2.4 shows participants' responses to the statement that the most important goal of practice is the elimination of mistakes. No students agreed completely with this statement. Six students (37.5%) agreed somewhat with the statement, while ten students (62.5%) disagreed with it.

Table 2.4
Most important goal of practice: Elimination of mistakes.

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Agree				
Agree somewhat	6 (37.5%)	2	4	
Disagree somewhat	6 (37.5%)	1	1	4
Disagree	4 (25%)	2	1	1

All DMA students disagreed with the statement, while MM and BM students' responses are distributed among the three choices from "agree somewhat" to "disagree." However, their basic ideas are similar: while elimination of mistakes is important, it is not the most important goal for these students. Instead, participants suggested that musicality is more important. Interestingly, one MM student said that musicality comes rather naturally to him or her, so he or she prefers to practice mainly to eliminate annoying mistakes. Fourteen participants provided their opinions regarding the importance of elimination of mistakes in practice, as shown below:

1) The most important goal is becoming one with the music – getting way – beyond "right" and "wrong" and interpretation and feeling. (BM)
2) Mistakes must be eliminated, but what have you gained if you can play all the right notes with no dynamics or musical structure? (BM)
3) Practice does make you better, but that shouldn't be the number 1 goal. (BM)
4) Overall musicality is more important to me than a flawless technical performance. (BM)
5) I guess the more important goal is to make music. No one is perfect; making mistakes makes us human. (BM)
6) I think more to musicality when practicing. Some note mistakes here and there are okay. (MM)
7) And improve musicality. (MM)
8) It is important, but not the most important goal. (MM)
9) It should also be used to gain a better understanding of a piece. (MM)
10) Musicality comes rather naturally to me, and so I prefer to practice mainly to eliminate annoying mistakes. (MM)
11) A performance that captures the character and essence of a work is better than a note-perfect but dull one. (DMA)

12) Maybe for the first few practice sessions. Beyond that, one should focus on other elements such as interpretation, etc. (DMA)
13) Yes, perhaps, but at some point it becomes comfort with the music and your individual interpretation. (DMA)
14) Goal is to produce good music. (DMA)

Repetition is an essential part of practicing, and there are two important conditions that must be involved. First, the repetition should be done properly. Second, it should be done consciously and purposefully. Table 2.5 shows students' responses to the statement that mechanical repetition provides a direct route to fine performance. No students agreed completely with this statement. Five students agreed somewhat with the statement.

Table 2.5
Mechanical repetition: Direct route to fine performance

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Agree				
Agree somewhat	5 (31.25%)	2	3	
Disagree somewhat	4 (25%)		1	3
Disagree	7 (43.75%)	3	2	2

Eleven participants, including all DMA students, disagreed with the statement. However, their basic ideas are not very different from the students who agreed somewhat. Most of the participants suggested that while in some passages repetition helps, it does not guarantee fine performance. Thirteen participants provided their opinions about mechanical repetition as a route to fine performance, as shown below.

1) No, you can "mechanically" practice wrong notes, and who wants to listen to anything that is mechanical, anyway? If you won't perform that way, don't practice that way! (BM)
2) Repetition is a good way to practice, but doesn't guarantee success. You must work individual problems. When you do this you will play over and over and that will give you fine performances. You can't play the whole song over and over. (BM)
3) Mechanical repetition gives you tendonitis. A fine performance is never mechanical. (BM)

4) Mechanical repetition leads to mechanical performance. (BM)
5) Sometimes, for certain passages that are more difficult, repetition does help. (BM)
6) Depending on the phrase you are repeating. Sometimes I think repetition will cause injury (when you have loud and big chords). (MM)
7) Intellect must always be present. Just repeating might actually have the reverse effect. (MM)
8) Perhaps not direct, but definitely a path to fine performance. (MM)
9) There is a place for repetition, but it does not guarantee a fine performance musically. (MM)
10) If you aren't thinking, repetition has little worth. (DMA)
11) This can only result in a secure performance. A truly fine performance involves a certain degree of spontaneity. (DMA)
12) Obviously, I feel that careful attention to technique is important, but thought and expression are more important to performance. (DMA)
13) A fine performance is good music, not mechanical. (DMA)

Technique, as a broad concept, is the ability to do what one wants to do. However, in many situations, students may understand technique as a very narrow concept, that is to say, as finger technique. The next statement was included to examine students' views on technique. Five students (31.25%) agreed at least somewhat with the statement that fingers should be the focus of piano technique. Eleven students (68.75%) disagreed with the statement, including all DMA students. Table 2.6 shows students' responses to the statement.

Table 2.6
Fingers: Focus of piano technique

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Agree	1 (6.25%)		1	
Agree somewhat	4 (25%)	2	2	
Disagree somewhat	6 (37.5%)	1	2	3
Disagree	5 (31.25%)	2	1	2

One student said that mind and heart should be the focus of technique, while others said that other areas of the body are also important. Three students mentioned

both physical (body) and mental (mind) aspects of technique. One BM student indicated the importance of listening. The responses reveal that these students do not have narrow concepts on technique. However, they do not seem to understand the mental aspects of technique completely. According to Hope, "technique is the ability to make every right note sound exactly when, exactly how, and for the exact length of time we intend."[86] Thirteen participants provided their opinions regarding the notion that fingers should be the focus of piano technique, as quoted below:

1) The mind and heart should be the focus. Free your mind; the fingers will follow. (BM)
2) Fingers are important, but so is wrist and arm movement. The ear is also important, listening for tone and control. (BM)
3) Piano technique involves the use of the entire body. (BM)
4) Finger independence and strength is the major part of piano technique, but mental readiness and agility is also important. (BM)
5) Technique comes from consistency of practicing it. To me, technique doesn't fall from the sky. It takes a very long time to build up a solid technique. Other than fingers, forearms and shoulders play a role, too. (BM)
6) Using the correct fingerings helps eliminate difficulty in scale-like passages. (MM)
7) Also wrist, arms. (MM)
8) . . . the fingers are the main elements of technique, but technique (I believe) includes other areas of the body and the mind as well. (MM)
9) Fingers, arms, body, big gestures. (MM)
10) Fingers don't have to work half as much if the arms and wrists are engaged as well. (DMA)
11) Fingers are not the only body part that is involved in piano playing. Other essential body parts are wrists, forearms, etc. (DMA)
12) The hand, wrist, arm, and entire body must be part of the focus. (DMA)
13) Fingers and brain function [together]. Mental. (DMA)

[86] Eric Hope, *A Handbook of Piano Playing* (London: D. Dobson, 1955), 11.

According to Lhevinne, "by intense concentration, love of the work and the spirit in which you approach it, you can do more in half an hour than in an hour spent purposelessly."[87] Table 2.7 shows participants' responses to the statement that the level of expertise achieved is directly related to the amount of practice undertaken. No participants disagreed completely with this statement.

Table 2.7
Level of expertise: Amount of practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Agree	4 (25%)		3	1
Agree somewhat	8 (50%)	4	2	2
Disagree somewhat	4 (25%)	1	1	2
Disagree				

Twelve students (75%) marked that they agree with this statement. Similar to the responses to previous statements, their comments are not entirely different from those who disagreed with the statement: increasing the amount of practice time helps to achieve expertise, and the effectiveness and the quality of practice affects the final result. One DMA student pointed out the importance of listening to recordings and reading piano-related literature. Eleven participants provided their opinions on the correlation between level of expertise and amount of practice, as shown below:

1) (Applied expertise, as in performance ability) It is possible to practice 1/2 the time [*sic*], but twice as efficiently and still achieve the same level of expertise. (BM)
2) To truly be great you must practice. Through the practice you learn everything about the piece and it becomes a part of you. However, the practice must be effective and productive. A person could practice every day for 10 hours and not achieve success – the best practice. Know how to practice effectively. (BM)
3) I think that the amount of expertise a person has correlates to the amount of things a person has tried out in practice. Personal

[87] Josef Lhevinne, *Basic Principles in Pianoforte Playing* (Philadelphia, PA: Theo. Presser Company, 1924), 44.

experience is the best expertise. (BM)

4) Some pieces come very easily, while others require much more practice to get even a mediocre level of expertise. (BM)
5) Some people practice a lot, some don't. I guess it's a mind-game. Practice just makes it more solid. (BM)
6) No practice [leads to] no progress, and no progress [leads to] no achievement! (MM)
7) Depends on the quality of practicing, also on personal limitations. (MM)
8) Practice does not make perfect, but it certainly helps to refine and polish pieces. (MM)
9) The kind of practice you do, better determines your achievements than the amount of time spent practicing. (MM)
10) Level of expertise will only increase when the amount of practice (on the piano and mentally), listening to recordings and reading of piano related literature increase. (DMA)
11) Good practice and plenty of time definitely affects [*sic*] the final understanding of music. (DMA)

According to Suzuki, "talent is not inborn, it has to be created."[88] The next statement was provided to examine students' misconceptions about talent. Table 2.8 shows students' responses to the statement that a good piano performance is possible and appropriate only for special students, namely, the so-called talented. No students agreed completely with this statement.

Table 2.8
Fine piano performance: Only for talented students

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Agree				
Agree somewhat	2 (12.5%)		1	1
Disagree somewhat	8 (50%)	1	4	3
Disagree	6 (37.5%)	4	1	1

In fact, fourteen (87.5%) participants disagreed with the statement. While they think that natural talent is a real plus, they also believe that a dedicated individual

[88] Shinich Suzuki, *Nurtured by Love: The Classical Approach to Talent Education*, tran. by Waltraud Suzuki (Miami, Fl: Summy-Birchard Inc., 1983), 36.

who works hard and is guided by inspiring teachers can perform well. Eleven participants provided their opinions on the importance of talent, as shown below:

1) "Good" may be defined in many ways. (BM)
2) Anyone can be taught how to play the piano well through good teaching and practice. Even average students can become talented if they work at it and truly want it. It is really up to the student. (BM)
3) Good performances can be achieved by anyone. (BM)
4) Anyone who is hard-working and dedicated can do a good performance. (BM)
5) Everyone can perform well, as long as they are guided through the right path with sufficient amount of preparation. But, of course, the special ones do have advantages over this. (BM)
6) Good piano performance is for everyone who works hard. The performers do not have to be talented! (MM)
7) Any student who practices and has a good teacher can perform well. They need to have an appropriate piece, too. (MM)
8) I have heard some pianists play well even if they don't really possess a "natural" talent. (MM)
9) Everybody can have a good performance if they are well-prepared and are playing within their means. (MM)
10) Innate musical intuition, potential, hard work, and inspiring guidance (teacher) lead to a good piano performance. (DMA)
11) Natural talent is a real plus, but musical performance cannot be limited to special abilities. (DMA)

Participants' responses to Questions 10 through 12 reflect their basic attitudes toward practice. The responses to the six statements in Question 12 imply that students have valuable concepts regarding practice. However, their understanding of the concept, "technique," needs to be broadened. In addition, the responses do not reveal much difference between academic levels. Instead, the responses reflect individuals' personal experiences and the development of their mental attitudes regarding practice. Responses to Question 11 suggest that when students practice, they focus on important and essential musical elements. However, responses to Question 10 reveal that they need more information on the nature of practice. In the

students' list of elements for productive practice, they do not emphasize the importance of knowledge regarding practice skills (37.5%), score study/reading (25%), listening while practicing (18.75%), self-evaluation (0%), or self-critiquing (0%).

Conscious Practice (Q13-21)

As previously explained in the section on the nature of practice, practice is not only a physical activity. It involves mental work in almost every moment, and it should be accomplished as much in the head as in the hands. Bernstein[89] and Hepp[90] used the phrase, "Intelligent Practice" to describe this practice process. However, this researcher uses the term "Conscious Practice" in this research to emphasize the level of awareness students may have while practicing. Approached from this perspective, this section consists of nine questions (Q13-21) regarding conscious practice. The first two questions in this section are general questions discussing conscious practice. The remaining questions concern listening, experimentation, and research on music.

Conscious Practice (Q13-14)

Question 13 asks what percentage of a typical practice session the participant thinks is "mindless practice." Thirteen participants (81.25%) said that 0% to 25% of a single practice session is mindless practice. Two participants (12.5%) responded

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[89] Berstein, 31.

[90] Christopher M. Hepp, "Piano Performance as a Heuristic Process with Appendix: Implications of the Heuristic Process for Piano Instruction" (D.M.A. diss., University of Colorado, 1986), 70.

that 26% to 50% is mindless, and one MM student responded that 51% to 75% is mindless. No participants believe that over 75% of a practice session is mindless. Table 3.1 shows participants' responses.

Table 3.1
Mindless practice

Mindless Practice	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
0-25%	13 (81.25%)	4	4	5
26-50%	2 (12.5%)	1	1	
51-75%	1 (6.25%)		1	
76-100%				

In Question 14, participants were asked to list the conscious practice techniques they believe work for them. Listening (31.25%) is the most frequent technique revealed in the responses of MM and DMA students. No BM student mentioned "listening" as a technique for conscious practice. The next most common techniques described are having goals in practice sessions (25%), analysis (25%), mental readiness for practice (25%), dividing music into working units (18.75%), and experimentation (18.75%). No BM or MM students mentioned "experimentation." Hence, for BM or MM students, experimentation seems not to be an important strategy for conscious practice. In addition, BM students mentioned more strategies related to self for conscious practice, while DMA students described more strategies related to music. Other techniques mentioned are shown in Table 3.2.

Table 3.2
Conscious practice strategies

Strategy	All (16)	BM (5)	MM (6)	DMA (5)
Strategy related to music				
Listening	5		2	3
Having clear goals in practice sessions	4	1	2	1
Analysis/looking for patterns and chords	4	1	1	2
Dividing music into units to work out	3	1	1	1
Experimentation with fingerings, tempos, etc.	3			3
Avoiding too many "play-through" in a practice session	2		1	1
Being aware of the problem or difficult section	1		1	
Thinking about the tone of each note	1			1
Hands separate practice	1	1		
Memorizing	1	1		
Knowing how to achieve the goals	1		1	
Recording	1	1		
Playing as if in performance	1	1		
Feeling the music	1		1	
Visual and aural image	1		1	
Strategy related to self				
Practice when mentally ready	4	3	1	
Having breaks	2	1		1
Moving on to a different piece of music when dull	1			1
Talking to myself	1	1		
Engaging the mind and the whole body	1	1		

Listening (Q15-17)

As the participants responded in Question 14, the quality of practice depends a great deal on constant and conscious listening. Further, "if we really listen, we could teach ourselves so much."[91] Questions 15 through 17 ask students to describe their listening habits in practice. In Question 15, nine participants (56.25%) said that they always listen carefully to their playing while practicing, while seven participants

[91] Bolton, 21.

(43.75%) listen carefully only some of the time. All BM students responded that they sometimes or always listen to their playing. However, in Question 14, no BM student mentioned the importance of listening as a technique of conscious practice. Table 3.3 shows participants' responses regarding listening in practice.

Table 3.3
Listening in practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Always	9 (56.25%)	3	4	2
Sometimes	7 (43.75%)	2	2	3
Never				

Question 16 asks students to describe how they listen to their playing while practicing. However, most students provided information not about how they listen but about the elements to which they listen. The most common elements to which they listen are tone quality and the balance of voices. The next elements commonly mentioned are accuracy, phrasing, and the overall effect of a performance. Interestingly, one BM student said that she or he listens to nonharmonic tones, dissonance, and unexpected things, and one DMA student said that she or he listens to the clarity of pedaling. Of those who provided information regarding how they listen, the most common listening techniques are experimentation and concentration. Table 3.4 shows participants' responses to Question 16.

Table 3.4
Listening behaviors related to practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
What				
Listening for tone quality	8	3	3	2
Listening to the balance of voices/voice leading	8	2	3	3
Listening to wrong notes/for accuracy	2	2		
Listening to phrasings	2		1	1
Listening for the overall effect of a performance/feeling	2	1	1	
Listening for rhythm	1		1	
Listening to nonharmonic tones, dissonance, and unexpected things	1	1		
Listening to articulations	1			1
Listening to clarity of pedaling	1			1
Listening to technical clarity and evenness	1		1	
Listening to rests	1		1	
How				
Experimentation in dynamics, tempos, And articulations	2		1	1
Concentration/listening with closed eyes	2	1	1	
Slow practice	1		1	
Playing hands separately	1	1		
Breaking down sections and listening for all parts	1	1		
Taping lessons	1	1		
Taping practice sessions	1	1		
Playing along with recordings	1			1
Pretending that I'm playing in a recital	1		1	

Question 17 asks students to describe how they benefit from listening to their playing. The most common benefit described is listening as an audience. The other benefits that students mentioned are improving expressiveness and musicality, better focusing, securing memory, adjusting to various instruments and halls, and inspiring more practice. Interestingly, one MM student said that listening to his or her playing

makes practicing fun. Fifteen participants' responses regarding the benefits of listening are quoted below.

1) I hope I am more aware, and thus better! More accurate! More expressive. (BM)
2) You must listen to your playing. The end result of listening is a musical performance. (BM)
3) It teaches me a great deal. I learn and then I can apply it to another piece, etc. (BM)
4) It forces me to play musically even when working out technical problems – rather than just doing mechanical drills. (BM)
5) You know what you want; you take time to think and breath through the music. (BM)
6) A lot. I used to not listen to my playing and my attention was everywhere. Now I listen. I have something to focus on. (MM)
7) Know how you actually sound; know how the audience will hear you. (MM)
8) If you don't listen, your playing will not improve and practice becomes pointless. (MM)
9) I hear what needs to be brought out more and what needs to be cleared up or made more clear. (MM)
10) You can almost become an audience member while you play if you listen carefully! This allows you to view/hear yourself externally rather than internally. (MM)
11) I concentrate better, my memory seems to be more secure, and I'm having more fun practicing. (MM)
12) It forces your mind to be engaged, it helps in memory, and allows you to adjust to various instruments and halls more easily. (DMA)
13) Listening to recordings of my own practice sessions helps me listen better as an audience – pedaling, balance, overall dynamics, and dramatic pacing of the music. (DMA)
14) It aids in evaluating the effect of the music on the possible audience. It inspires more practice. (DMA)
15) You develop as a musician if you develop a keen sense of ear. (DMA)

Experimentation (Q18)

While practicing, students should be aware of errors and improvements in playing, and they should correct the errors and maintain the improvements. This process requires constant listening, self-evaluation, and experimentation. Question

18 asks students how often they experiment in their practice. One BM student and one MM student (12.5%) responded that they never experiment, while two BM students (12.5%) answered that they always experiment in their practice. Interestingly, in Question 15, all students said that they sometimes or always listen carefully to their playing while practicing. The two students who responded to Question 18 that they never experiment in practice might not realize how listening leads to experimentation in practice or they do not understand the concept, "experimentation in practice." Twelve students (75%), over all levels, answered that they sometimes experiment. Table 3.5 shows the responses.

Table 3.5
Frequency of experimentation in practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Always	2 (12.5%)	2		
Sometimes	12 (75%)	2	5	5
Never	2 (12.5%)	1	1	

Research on music (Q19-21)

Many mistakes in performance stem from not knowing a piece sufficiently well. The process of practicing consists of associating ideas about the music with the physical activities involved. Students need to know the historical background of their music and should think about the music for themselves, which leads to the necessity of reading and research. Question 19 asks how often students question themselves regarding how the composer may have intended a work to be played rather than how their teacher told them to play it. Only one DMA (6.25%) student said that he or she always questions the intent of the composer, while twelve students (75%) said that

they sometimes do so. Two BM students and one MM student (18.75%) said that they never do so. Table 3.6 shows participants' responses.

Table 3.6
Recognition of composer's intent

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Always	1 (6.25%)			1
Sometimes	12 (75%)	3	5	4
Never	3 (18.75%)	2	1	

In Question 20, four students (25%) answered that they always research or read about the pieces they play, and nine students (56.25%) answered that they sometimes do so. Interestingly, two MM students and one DMA student said that they do not research or read about their pieces, though all BM students do so at least some of the time. Table 3.7 shows participants' responses.

Table 3.7
Use of research or reading

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Always	4 (25%)	1	1	2
Sometimes	9 (56.25%)	4	3	2
Never	3 (18.75%)		2	1

In Question 21, eight students (50%) answered that research helps them improve their playing very much. Eight students (50%) responded that research helps them improve some. Table 3.8 shows participants' responses regarding how much they think research helps them improve their playing.

Table 3.8
Helpfulness of research

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Very much	8 (50%)	2	3	3
Some	8 (50%)	3	3	2
Not at all				

Students' responses to Questions 13 through 15 imply that most students practice consciously through listening. However, their responses to Questions 16 through 21 reveal that students need to be informed of varied listening techniques or experimentation skills in practice. In addition, students need to be encouraged to read more and to think for themselves about the music they play.

Practice Organization and Pacing (Q22-25)

Practice session length (Q22)

The four questions in this section (Q22-25) assess about practice organization and pacing of practice. Sandor once recommended the value of taking a short break after practicing twenty minutes,[92] while Richter is said to have practiced a minimum of twelve hours daily without stops when preparing for a program.[93] In Question 22, eleven students (68.75%) said that they normally practice for one to two hours in a single session, while five students (31.25%) said that they do so for three to six hours. Table 4.1 shows the responses.

[92] Gyorgy Sandor, *On Piano Playing: Motion, Sound, and Expression* (New York: Schirmer Books, 1981), 187.

[93] Jacques Leisler, "The Always Unpredictable Richer," *Clavier,* 39 July/August 2000, 18.

Table 4.1
Practice session length

Length	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
1-1.5 hours	5 (31.25%)	2	1	2
2 hours	6 (37.5%)		4	2
3-4 hours	4 (25%)	2	1	1
4-6 hours	1 (6.25%)	1		

Breaks (Q23)

Brief rest breaks might help students overcome plateaus in learning the music. Furthermore, it is possible that injuries could also be prevented with rest breaks. In Question 23, fifteen participants (93.75%), excluding one DMA student, said that they take breaks when practicing. Their most common responses revealed that they take breaks every one or one and a half hours (64.29%). The most common lengths of breaks are less than ten minutes (84.62%). Tables 4.2 and 4.3 show how often and how long the breaks are according to the participants' responses.

Table 4.2
Frequency of rest breaks

Response	All (N=14)	BM (N=5)	MM (N=6)	DMA (N=3)
Every 25-30 minutes	2 (14.28%)	1		1
Every 45 minutes to 1 hour	3 (21.43%)	1	2	
Every one hour or one and a half hours	9 (64.29%)	3	4	2

Table 4.3
Length of rest breaks

Length	All (N=13)	BM (N=3)	MM (N=6)	DMA (N=4)
Less than 5 minutes	6 (46.16%)	1	3	2
5-10 minutes	5 (38.46%)	1	2	2
15-20 minutes	1 (7.69%)	1		
20-30 minutes	1 (7.69%)		1	

Practice routines (Q24)

According to Lethco[94] and Parsons,[95] organized practice is effective. In Question 24, 25% of the participants, including one BM student, two MM students, and one DMA student, answered that they have sequential practice routines, and they recounted their routines. Three students said that they start their practice with warm-ups and end with the music they are learning. "Repertoire practice," as Chase[96] recommended, sight-reading, and improvisation, as Pace[97] recommended including in one's daily routine, were not mentioned in students' responses. One BM student and one MM student did not understand the question, and they wrote question marks on the provided space. Following are the practice routines described by the four participants who responded:

1) I always start off with warm-ups: scales and technique. Then I will go through and work on some of the more difficult parts of my music before I play through the whole piece. (BM)
2) I warm up with technique and stretching exercises, then work on pieces. (MM)
3) I usually try to practice before lunch and then I review and reinforce practice in the afternoon, and sometimes I return in the evening. I usually rotate the choice of pieces in my practice, mostly in sections. (MM)
4) In the morning, I warm up with scales, arpeggios. Sometimes I play through what I've worked on in an earlier session or an easy piece. I take a section of a piece that needs work and "detail" it. Then I put it into a larger section. If memory works, I play slowly with music, then play sections without score, etc. (DMA)

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[94] Sheila M. Gunn, "Traditions and Strategies for Productive Keyboard Practice" (M.M. thesis, University of Texas, Austin, 1987), 40.

[95] Albert R. Parsons, *The Science of Pianoforte Practice: An Essay on Proper Utilization of Practice Time* (New York: G. Schirmer, 1886), 26.

[96] Mary W. Chase, *Natural Laws in Piano Technic* (Boston: Oliver Ditson Company, 1910), 109.

[97] Pace, 19.

Variety and newness (Q25)

As Lhevinne once recommended,[98] in addition to practice routines, seeking variety and newness in each practice session are also important as means of enhancing the efficiency of practice. In Question 25, eight students (50%) said that they seek variety and newness in their practice. Table 4.4 shows their responses.

Table 4.4
Variety and newness in practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	8 (50%)	3	3	2
No	8 (50%)	2	3	3

Seven participants described their ways of seeking variety and newness in practice. Five of them said that they seek variety and newness through experimentation, listening, and utilizing varied practice strategies. One DMA student said that he or she does so through score study. One BM student said that he or she changes the sequence of pieces. Further, one MM student said that he or she dresses up well and plays as if in a recital. Participants did not mention sight-reading, "repertoire practice," or improvisation as means of seeking variety and newness. The following are comments regarding variety and newness from the seven students:

1) With the techniques below [this participant drew an arrow to direct attention to response categories in Question 26]. (BM)
2) I try not to make something sound the same as before. I try to make the "softs" softer and "louds" louder. I listen for longer lines than before. (BM)
3) Change the sequence of pieces practiced. (BM)
4) Change of tempo, voicing, etc. (MM)
5) I like to try new things with certain passages of my pieces that will help me develop my own signature style. Most of the new things I do are creative variations on traditional styles. (MM)

[98] Lhevinne, 44.

6) Sometimes I dress up for practice so that it feels more important and special. Sometimes I lift the tail of the grand piano when I play a certain section well. (MM)
7) Physically – Change the tempo, touch, and articulation. Mentally – Study the score from a different angle if possible. (DMA)

According to students' responses to Questions 22 through 25, they need to know the value of warm-ups, "repertoire practice," sight-reading, and improvisation in organizing their practice. In addition, more students need to be informed of the importance of seeking variety and newness through listening, experimentation, and utilization of varied practice strategies to increase practice productivity.

Utilization of Practice Strategies (Q26-36)

This section is intended to examine students' utilization of various practice strategies. It includes eleven questions concerning utilization of specific practice strategies, memorization, audiotaping, use of performance models, self-critiquing, and self-teaching.

Practice strategies (Q26)

Question 26 was designed to evaluate the specific practice strategies students utilize in their practice. Practice strategies that students often utilize are repetition, isolation of troublesome passages, slow practice, and hearing an aural image before playing. In addition, students sometimes utilize a variety of other strategies. For example, some strategies utilized include playing with different articulations or dynamics than those written in the score, blocking, playing with varying tempo, and working with each hand separately. Further, students may experiment with

fingerings, start at the end and work back, rehearse mentally away from the piano, practice in rhythmic variants, sing one part, play the harmonic structure, and shift accents. Finally, students may try redistributing the notes with the hands, stopping and preparing for what is coming, simplifying the texture, and aural imaging of a model performance. The least utilized practice strategies are writing a piece from memory, writing a practice/lesson journal or log (Bolton[99] and Judy[100]), "mistake practice (Berr[101])," silent practice on the keyboard (Slenczynska[102]), playing passages with the other hand (Bernstein[103]), and playing and counting out loud (Clark[104]). According to Grusson, more experienced pianists tend to utilize more varied practice strategies.[105] However, in this study there were not significant differences between academic levels. Table 5.1 shows participants' responses to the practice strategies listed on the survey.

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[99] Bolton, 31.

[100] Judy, 97.

[101] Bruce Berr, "Practice Techniques for Piano Based on Score Transformation" (D.M. diss., Northwestern University, 1993), 79-80.

[102] Ruth Slenczynska, *Music at Your Fingertips: Advice for the Artist and Amateur on Playing the Piano* (Da Capo Press, 1968), 119.

[103] Bernstein, 104.

[104] Clark, 157.

[105] Linda M. Grusson, "Rehearsal Skill and Musical Competence: Does Practice Make Perfect?" in *Generative Process in Music: The Psychology of Performance, Improvisation, and Composition*, ed. John A. Sloboda (New York: Oxford University Press, 1988), 91-112.

Table 5.1
Practice strategies (N=16)

Practice Strategy	Often (B/M/D)	Sometimes (B/M/D)	Never (B/M/D)
Repetition	14 (4/6/4)	2 (1/0/1)	
Isolation of troublesome passages	13 (4/6/3)	3 (1/0/2)	
Slow practice	10 (4/5/1)	6 (1/1/4)	
Hearing an aural image before playing	7 (3/1/3)	6 (2/3/1)	3 (0/2/1)
Playing with different articulations	1 (0/0/1)	14 (4/6/4)	1 (1/0/0)
Blocking		13 (4/5/4)	3 (1/1/1)
Playing with varying tempo	3 (1/2/0)	13 (4/4/5)	
Playing with different dynamics	1 (0/0/1)	13 (4/6/3)	2 (1/0/1)
Hands separately	5 (3/2/0)	11 (2/4/5)	
Experimenting with fingerings	5 (2/2/1)	11 (3/4/4)	
Starting at the end and working back	2 (1/1/0)	11 (4/3/4)	3 (0/2/1)
Pretending it is a real performance	6 (4/1/1)	10 (1/5/4)	
Mental rehearsal away from the piano	5 (2/1/2)	9 (3/3/3)	2 (0/2/0)
Practicing in rhythmic variants	5 (1/4/0)	9 (4/2/3)	2 (0/0/2)
Singing one part	5 (2/3/0)	9 (2/3/4)	2 (1/0/1)
Playing the harmonic structure	2 (1/0/1)	9 (3/3/3)	5 (1/3/1)
Shifting accents	2 (0/1/1)	9 (4/3/2)	5 (1/2/2)
Trying out redistribution of notes with the hands	3 (3/0/0)	8 (1/3/4)	5 (1/3/1)
Stopping and preparing for what is coming	3 (2/1/0)	8 (2/2/4)	5 (1/3/1)
Simplification of texture	2 (1/0/1)	8 (1/3/4)	6 (3/3/0)
Aural image of a model performance	5 (2/2/1)	6 (2/3/1)	5 (1/1/3)
Playing and counting out loud	1 (1/0/0)	7 (1/3/3)	8 (3/3/2)
Silent practice on the keyboard		7 (3/1/3)	9 (2/5/2)
Playing passages with the other hand	1 (1/0/0)	4 (1/1/2)	11 (3/5/3)
"Mistake practice"		5 (1/1/3)	11 (4/5/2)
Writing a practice journal or log	2 (1/0/1)	2 (0/1/1)	12 (4/5/3)
Writing a lesson journal or log	1 (1/0/0)	1 (0/1/0)	14 (4/5/5)
Writing a piece from memory			16 (5/6/5)

Memorization (Q27-29)

The next three questions were designed to examine students' thoughts on memorization in practice. Question 27 asks students to note when they begin to

memorize a piece of music. Six students (37.5%) answered that they try to learn and memorize music at the same time, while ten students (62.5%) memorize after learning the music. Hope once said, "The art of learning consists of the acquisition of knowledge, the forming of sequences of thought or of mental patterns. It involves the art of remembering."[106] Memorization is an integral part of practice. However, students' responses reveal that some students think that memorization and learning are two distinct processes. Table 5.2 shows participants' responses.

Table 5.2
Memorization

Response	All (N=16)	BM (5)	MM (6)	DMA (5)
Learning music and memorizing at the same time	6 (37.5%)	1	3	2
After learning the music	10 (62.5%)	4	3	3

Question 28 asks what participants think causes memory slips. Participants knew well what causes memory slips. For example, they describe nervousness, loss of focus, mental doubting (lack of confidence), lack of mental preparation, and lack of concentration as causes. In addition, lack of thorough listening in practice, not anticipating what is coming next, playing faster than one is thinking, not knowing the piece well enough, and failure to memorize on several levels are also thought to cause memory slips. Sixteen students' comments on memorization are quoted below:

1) I daydream when performing. Often, slips occur when the music was never solid in the memory at all. Practice starting at different [places]. (BM)
2) Memory slips happen when you simply haven't taken the time to memorize the notes when you have memorized it and have a slip [*sic*]. For me, it comes from my mind slipping in and out from the music to other things — becoming unfocused. (BM)

[106] Hope, 52.

3) I think mental doubting or lack of confidence might be one reason. Another is not really listening in practice so that the performance feels different. (BM)
4) Not being mentally calm and prepared. Not anticipating the next section and playing faster than one is thinking. (BM)
5) Sometimes, in a piece, there are places we know real well and places we don't. We often work on those places where [sic] we don't know as well more and ignore those we know. For me, most of the time memory slips occur on places I thought I really knew. (BM)
6) Nervousness. No security in music (in other words, don't know the piece well enough). (MM)
7) Nerves. Insecurity from not knowing the piece perfectly. (MM) The feeling that I'm not ready to perform a piece causes me to have an insecure memory. Most importantly, being FORCED to perform when I'm not confident almost always results in some memory problems. (MM)
8) Not having more than one way of memorizing, i.e., not combining aural [*sic*], form, starting places, etc. (MM)
9) Lack of confidence and bad preparation. (MM)
10) Insecurity. Shift in concentration. (MM)
11) Lack of concentration in practice or the performance; failure to memorize on several levels at all times. (DMA)
12) Nervousness; less preparation. (DMA)
13) Nervousness. Lack of concentration (sometimes one tends to slip into the unconscious state of mind). Incorrect methods of memorizing (solely relying on kinesthetic memory is risky). (DMA)
14) Bad practice (not thorough study); loss of focus (nerves that stop the flow). (DMA)
15) Mental farts. (DMA)

Question 29 asks how participants try to improve their musical memorization skills. Mental or aural practice away from the piano, memorizing in structural units, and making starting points are the most common strategies. The next most commonly mentioned strategies are understanding the music from the whole to details, score study/harmonic analysis, using visual memory skills, and playing in public. No students mentioned attempts to listen carefully to improve their memorization efficiency. One MM student said that he or she is looking for a way to improve his or her memorization skill.

Many students can memorize a piece of music without bothering to develop an understanding of the basic principles in the piece. This kind of memorization is the process by which children usually learn music. They simply practice the piece over and over until they can play it automatically from memory. Students become quite accustomed to this habit. However, around the age of sixteen to twenty-two, though they have not previously experienced difficulties, some individuals may begin to suffer from memory problems when playing. Interestingly, only one student, a Master's candidate, said that he or she has never had a problem with memorizing.

Further, according to Collins, no matter how well prepared a pianist may be, in a performance he or she must be able to deal with wrong notes and be able to connect them in a meaningful whole.[107] Hence, Collins recommended acquiring improvisation skills for dealing with unexpected blunders in performance. No participants mentioned improvisation as a means of improving memorization skills. Participants' responses are categorized in Table 5.3 and their original comments are found in Appendix F.

[107] Richard Collins, *A Handbook for the Advanced Student* (Vista, CA: by the author, 1985), 6.

Table 5.3
Improvement of memorization skills

Memorization skill	All (N=15)	BM (N=5)	MM (N=5)	DMA (N=5)
Aural/mental practice	5	2	2	1
Memorizing in structural units/starting spots	5	2		3
Understanding the music from the whole to details	2	1		1
Score study/harmonic analysis	2	1	1	
Using visual memory skills	2	2		
Playing in public	2			2
Testing memory in different ways	1		1	
Listening to good recordings	1		1	
Beginning memorization as early as possible	1		1	

Audiotaping (Q30-31)

Questions 30 and 31 ask about the utilization of audiotaping in practice. Audiotaping fosters students' listening objectivity, thus making students listen critically to their own playing. Question 30 asks how often students audiotape their practice. Two students (12.5%) said that they always record their practice, while four students (25%) said they never do so. Eight students (50%) said they sometimes tape themselves, while five students (31.25%) said that they audiotape their practice before public performances. Participants' responses are shown in table 5.4.

Table 5.4
Use of audiotaping

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Always	2 (12.5%)	2		
Sometimes	8 (50%)	2	3	3
Before public performance	5 (31.25%)	1	3	1
Never	4 (25%)	1	1	2

Question 31 asks participants how audiotaping helps their practice. The most common benefit of audiotaping that students described is being able to hear what they

do not catch while practicing. The next common benefit described is listening from an audience's point of view. In addition, one BM student and one MM student indicated the importance of self-evaluation while listening. Another BM student said that audiotaping is a good way to chart progress. Most interestingly, one BM student said that audiotaping teaches him or her to be his or her own teacher. Thirteen students' responses about audiotaping are quoted below.

1) Sure – if you listen and evaluate! (BM)
2) Audiotaping is extremely beneficial! It gives you a chance to hear yourself. The tape never lies – if you don't crescendo – the tape will prove it. You can hear everything you do and also it's a good way to chart progress. (BM)
3) It teaches me to be my own teacher, in a sense. Sometimes while playing, one cannot always be aware of how everything sounds. (BM)
4) It helps immensely – lets me hear my playing as an audience member and lets me know if what I am trying to do with the music actually comes across. (BM)
5) It helps a lot. Lets you listen to things that you don't catch while practicing. Gives you a chance to listen to yourself from an audience point-of-view. (BM)
6) A lot actually. I sometimes did not realize my tempo fluctuations and imbalance of voicing in my playing until . . . I hear the recording. (MM)
7) You can actually listen to yourself as an audience would. (MM)
8) It might point out different things that you don't hear while you're playing. (MM)
9) This helps me a lot since I can hear my performance from an external point of view – and since I know the music well, I can be very detailed about my evaluation. (MM)
10) It actually makes you hear your playing from an audience perspective. (MM)
11) Sometimes I hear differently. (DMA)
12) Yes. Especially when one is preparing for a public performance. (DMA)
13) Helps you hear things you usually don't .(DMA)

Performance models (Q32-33)

According to Zurcher, model-supportive practice is effective.[108] In Question 32, five students (31.25%) said that they always use performance models, and nine students (56.25%) said that they sometimes do so. BM and MM students use performance models more than DMA students do. Table 5.5 shows participants' responses.

Table 5.5
Use of performance models

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Always	5 (31.25%)	2	3	
Sometimes	9 (56.25%)	3	3	3
Before public performance	1 (6.25%)			1
Never	1 (6.25%)			1

In Question 33, six participants (37.5%) said that model recordings help their practice very much. Ten students (62.5%) said models help some. Participants' responses are shown in Table 5.6.

Table 5.6
Benefit of performance models

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Very much	6 (37.5%)	2	3	1
Some	10 (62.5%)	3	3	4
Not at all				

[108] William Zurcher, "The Effect of Model-Supportive Practice on Beginning Brass Instrumentalists," in *Research in Music Behavior: Modifying Music Behavior in the Classroom,* ed. Clifford K. Madsen, R. Douglas Greer, and Charles H. Madsen Jr. (New York: Teachers College Press, 1972): 131-38.

Self-critiquing and Self-teaching (Q34-35)

Robert Schumann once said, "Always play as if a master were present."[109] Schumann's advice may be a way to self-critique. Question 34 asks if a student ever imagines that his or her teacher or an imaginary great pianist is in the practice room to critique them. Only one DMA student said yes, and he or she explained, "Evaluating my own playing [is an] inspiration to try some technique." Participants' responses to Question 34 are shown in Table 5.7.

Table 5.7
Imaginary critic

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	1 (6.25%)			1
No	15 (93.75%)	5	6	4

Eventually, most of the students who responded to this survey will become piano instructors. In a sense, they are their own students. In Question 35, ten students (62.5%) said that they have pretended they are teaching themselves when they practice. Included among the six students who responded negatively are two DMA students and three MM students. Participants' responses regarding self-teaching are shown in Table 5.8.

Table 5.8
Self-teaching

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	10 (62.5%)	4	3	3
No	6 (37.5%)	1	3	2

[109] Bernstein, 13

The benefits from self-teaching that these students mentioned include keeping them engaged, coming up with other ideas, practicing on their own, and fostering critique of others and themselves. One BM student said that she or he talks to her- or himself when practicing. One MM students and one DMA student mentioned that eventually students will become their own teachers and that it is important to take their own advice in practice. The following quotes are nine participants' comments on the benefits of self-teaching:

1) Yes, I must be constantly listening and critiquing myself. It leads to better, more effective practice. It keeps me engaged. (BM)
2) It forces me to not accept things that don't sound good. Or it also helps me to come up with other ideas if I have to think about what someone else might say. (BM)
3) Helps me not get lazy and let mistakes slip by. (BM)
4) A lot. Sometimes by pretending I am a teacher, I would make things clearer and easier to see rather than blind practice. I talk to myself when I practice. (BM)
5) Usually I know how to play what I hear. Sometimes, it takes a while before I can actually do it. But the fun part is when I do it on my own without my teacher's help. (MM)
6) It helps you learn how to critique others and yourself because eventually we will all become our own teachers. (MM)
7) That's what practice is. (MM)
8) We study how to teach others; taking our own advice in practice ideas is important! (DMA)
9) Being self-critical and having self-discipline help me in my practicing most of the time. (DMA)

Utilization of practice strategies (Q36)

Question 36 was designed to examine whether students think they utilize varied practice strategies enough. Ten participants (62.5%) responded that they utilize enough practice strategies to improve their performance. Interestingly, among the six students who said "no mostly," three DMA students were included. Participants' responses are shown in Table 5.9.

Table 5.9
Utilization of practice strategies

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	3 (18.75%)	1	1	1
Yes mostly	7 (43.75%)	2	4	1
No mostly	6 (37.5%)	2	1	3
No				

Students' responses to Question 26, the checklist for specific practice strategies, imply that they utilize varied practice strategies, and there are not significant differences between academic levels. However, their responses to Question 36, whether students think they utilize varied practice strategies enough, reveal that some students do not think that they utilize enough varied practice strategies. According to responses to Question 28, students know well what causes memory slips. However, some students need to know that learning and memorization are not separate processes. Responses to Question 29 reveal that students try to improve their musical memorization skills. In doing so, they need to know the importance of listening and training, such as improvisation, for dealing with unexpected blunders in performance. Students' responses to Questions 30 through 35 imply that audiotaping, use of performance models, self-critiquing, and self-teaching need to be emphasized more by teachers along with specific instructions.

Understanding of Individual Learning Styles (Q37-42)

According to Green, awareness is the basic rule of practice.[110] One of the most important aspects of awareness is knowing of one's own learning styles and personal traits. If students know their own learning styles and utilize them, their practice can be effective and productive. Questions 37 through 42 are related to understanding individual learning styles.

Understanding of personal learning styles (Q37-38)

Questions 37 and 38 concern students' understanding of their individual learning styles. Each individual requires an individualized approach; thus, if students know their learning styles and try to create the proper conditions and environment for enhancing their efficiency, they can achieve the best results. In Question 37, seven students (43.75%) said that they know whether they are a holistic, serialistic, or versatile learner in practice. One MM student (6.25%) said he or she does not know. Eight students (50%) said that they had never thought about it. Table 6.1 shows participants' responses.

Table 6.1
Musical learning approach

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	7 (43.75%)	3	1	3
No	1 (6.25%)		1	
Never thought about it	8 (50%)	2	4	2

[110] Barry Green and W. Timothy Gallwey, *The Inner Game of Music* (New York: Doubleday, 1986), 37-38.

In Question 38, thirteen students (81.25%) said that they know the kind of sensory learners they are. One MM student said he or she does not know, while one DMA student and one BM student (12.5%) said that they had never thought about it. Table 6.2 shows participants' responses.

Table 6.2
Sensory learning style

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	13 (81.25%)	4	5	4
No	1 (6.25%)		1	
Never thought about it	2 (12.5%)	1		1

Concentration (Q39-40)

Sandor says, "If you repeat a certain motion with great concentration and play it the same way on every repetition, the process of ingraining the material will be very rapid, and the results will be lasting."[111] Concentration is a necessity in good practice. Questions 39 and 40 deal with students' understanding of their concentration styles. In Question 39, fifteen students (93.75%) said that they know at what times they can better concentrate on practice. Only one DMA student said he or she does not know these times. Participants' responses are shown in Table 6.3.

Table 6.3
Prime concentration times

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	15 (93.75%)	5	6	4
No	1 (6.25%)			1
Never thought about it				

[111] Sandor, 184.

Madsen and Geringer reported that the awareness of distraction in practice can improve efficiency of practice.[112] In Question 40, sixteen students described elements of distraction that may occur while practicing. The most common distractions include other things to do, visits by friends, the phone, and tiredness. Interestingly, one BM student and one MM student mentioned that boredom distracts them from practice. Boredom can result from not using varied practice techniques. In addition, one BM student said that she or he is distracted only by mindless practice. Students' responses are categorized in Table 6.4 and their original comments are found in Appendix F.

Table 6.4
Distraction elements

Distraction	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Other things to do	5	1	3	1
Not enough sleep or rest/tiredness	5	2	3	
Friends/visitors/chatting/phone	5		2	3
Thoughts that are not music-related	4	1	2	1
Sounds from other practice rooms	3	1	2	
Boredom	2	1	1	
Inappropriate practice habits/mindless practice	2	1		1
Piano in bad condition	1			1
Nice weather	1	1		
When I have a bad day	1		1	
Exciting plans for the day	1	1		
Lack of motivation	1		1	
Stressed out due to other academic work	1			1
Hunger	1	1		
When I know others may be listening	1	1		

[112] Clifford K. Madsen and John M. Geringer, "The Effect of a Distraction Index on Improving Practice Attentiveness and Musical Performance," *Council for Research in Music Education* 66-67 (Spring/Summer 1981): 46-52.

Students' efforts to improve practice effectiveness (Q41-42)

Questions 41 and 42 concern students' efforts to improve their practice effectiveness. In Question 41, ten students (62.5%) said that they have weaknesses in performance that result from inappropriate or inefficient ways of practice. Table 6.5 shows participants' responses.

Table 6.5
Ineffective practice and performance weakness

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	10 (62.5%)	4	3	3
No	6 (37.5%)	1	3	2

The inappropriate or ineffective ways of practice they described are: looking for "quick fixes" of trouble spots instead of thoroughly working them out; relying on tactile memory; practicing mindlessly; not enough time; lack of "mistake practice" or rehearsal before different kinds of audiences; and not thorough practice. Interestingly, one BM student said that he or she is quite satisfied with his or her practice. Further, one MM student said that he or she has been working on weaknesses and has accomplished much improvement. Ten students' descriptions of their ineffective practice are quoted below:

1) I don't know, but I'm sure I do. It would seem arrogant to assume that I am a perfect practicer! (BM)
2) Yes! I believe any problem can be worked out with effective practice, eliminating performance blunders. The key is knowing how to effectively work out the problems. (BM)
3) Practice makes perfect. That's what people say. To me, practice just make things more solid. A proper and effective way of practice is important for a good performance. And so far, I am quite satisfied with my practice. Weaknesses come only when I am not fully prepared for the up-coming performance. (BM)
4) I tend to look for quick fixes to trouble spots instead of thoroughly working them out, so in performance they're not always as clear as they should be. (BM)

5) I rely too much on tactile memory and my playing often lacks confidence, especially the memory. (MM)
6) I believe that most of the time, I'm not in the mood to practice, and I'll practice mindlessly. Other times, I'll give up if I can't seem to play well that day. (MM)
7) I had weaknesses in the past and I'm still working on them. Nonetheless, there has been much improvement in this area. (MM)
8) Not enough time! (DMA)
9) Didn't have enough "mistake practice" and rehearsals before different kind of audiences. (DMA)
10) Focus is difficult in performance when practice is not thorough (memory, technique). (DMA)

In Question 42, students provided information about their efforts to improve practice habits. Listening and concentration are the most commonly mentioned efforts by BM and MM students. Interestingly, three DMA students said they have difficulty blocking out practice times in their schedules. Thirteen students' responses are categorized in Table 6.6 and their original comments are found in Appendix F.

Table 6.6
Practice improvement

Effort	All (N=13)	BM (N=4)	MM (N=6)	DMA (N=3)
Listening	4	2	2	
Concentration/practice as early in the day as possible/blocking out distractions/stopping when I lost concentration	4	1	3	
Practice in sections	3	1	1	1
Looking for more time/steady schedule	3			3
Use of imagery/mental practice	2		1	1
Setting goals	2	1	1	
Following teacher's advice on practice	1	1		
Utilization of different approaches to practicing	1	1		
Sleeping enough	1		1	
Building confidence	1		1	

According to students' responses to Questions 37 through 42, most students know their learning styles and practice habits and try to improve their practice

efficiency and effectiveness. However, they do not mention score study, audio-taping, research or reading, self-evaluation, or writing lesson/practice logs as means for improving their practice effectiveness.

Reading Related to Practice and Students' General Thoughts on Practice (Q43-48)

Reading related to practice (Q43-44)

Questions 43 and 44 concern reading related to practice. These two questions resulted from the researcher's personal experience. While studying piano pedagogy at OU, the researcher read several books on technique, piano pedagogy, and practice that have helped her to think seriously about her practice skills and to try to improve them. Question 43 listed four books on practice and ten books on piano playing in general and asked whether students had read them. According to students' responses, DMA students had read and recognized more of these books than BM and MM students did. Table 7.1 illustrates how many books listed in Question 43 students recognized.

Table 7.1
Recognition of books on piano playing and practice (N=14)

Academic Level	Read entire book	Read part of book	Heard of book but not read	Never heard of book
BM 1				14
BM 2		1		13
BM 3		1	1	12
BM 4	1	5	8	
BM 5		5	1	8
MM 1		2	2	10
MM 2	1	1	3	9
MM 3	2	2	3	7
MM 4	3	2	3	6
MM 5				14
MM 6			3	11
DMA 1	3	6	4	1
DMA 2	4	5	3	2
DMA 3	1	5	5	3
DMA 4		1	7	6
DMA 5		2	3	9

In Question 44, two students (13.33%) said that reading about practice helps them very much to practice effectively, eleven students (73.33%) said it helps some, and two students (13.33%) responded not at all. One BM student did not mark any of the response categories; instead, he or she wrote, "I have not read much about piano subjects or music at all." Table 7.2 shows participants' responses.

Table7.2
Effectiveness of reading

Response	All (N=15)	BM (N=4)	MM (N=6)	DMA (N=5)
Very much	2 (13.33%)	1		1
Some	11 (73.33%)	2	5	4
Not at all	2 (13.33%)	1	1	

Students' general thoughts on practice (Q45-48)

The last three questions concern students' general thoughts on practice, and one question asks students for additional comments on the survey itself. In Question 45, fourteen students (87.5%) said they have thought about their practice strategies or habits seriously before participating in this survey. Of these, two said they had thought "a lot." On the other hand, two students responded that they had not given practice strategies any thought prior to participating in this survey. Table 7.3 shows participants' responses.

Table 7.3
Consideration of practice strategies

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes, a lot	2 (12.5%)	1	1	
Yes, some	12 (75%)	4	4	4
No	2 (12.5%)		1	1

Those students who had previously considered practice strategies said that their teachers' advice, preparing for a recital, and pedagogy classes made them think about their practice habits. One BM student said that she or he started to think about her or his practice habits since coming to college. Ten students explained their consideration of practice strategies, as quoted below.

1) Just since I came to college: my teacher challenges me to "Think outside the Box." (BM)
2) When I started piano at the collegiate level this year, I found that my practice skills were not very good, and that a lot of my practice was mindless practice. I have been thinking about my practice habits a lot in the past six months, trying to find what works best with me – and effectively practicing to achieve my maximum abilities. (BM)
3) I've thought about how to practice so that I accomplish the best in the least amount of time. (BM)
4) When preparing for a recital I try to evaluate my practicing to see if I'm getting as much as I can out of it. (BM)
5) I always wonder if my practice strategies are sufficient enough. And

I always would love to know what kind of practice habits I have. I practice to make music fun and better. I never really thought much about the strategies and habits until I go [*sic*] through this questionnaire. (BM)

6) My new teacher here at OU has made me aware of some bad practice habits I collected in undergrad studies. Since, I've been more successful in my performance. (MM)
7) Well, thought about practicing has been brought up in pedagogy classes and private lessons. (MM)
8) I always wondered if there was a certain way I should practice. (MM)
9) Through pedagogy courses in the past year – they have made me become more aware of my practice habits. (DMA)
10) Every now and then I consider how much I need to evaluate my practicing, but at this point my methods are pretty automatic, so I don't see a need for great analysis or adjustment. (DMA)

In Question 46, fourteen students (87.5%) described the strongest aspects and weakest aspects of their practice. Each student mentioned different aspects. However, for BM students, listening is one of the weakest aspects, while for MM and DMA students, it is one of the strongest aspects. In response to Question 42, "How do you try to improve your practice efficiency and effectiveness?" no DMA students specifically mentioned "listening." Thus, DMA students' responses to Question 46 may imply that they take listening in practice for granted with the result that they did not mention it when responding to Question 42. In particular, one of the weakest aspects described by DMA students is not having enough practice time. Participants' responses are categorized in Table 7.4 and their original comments are found in Appendix F.

Table 7.4
Strongest and weakest aspects of practice

Academic Level	Strongest Aspect	Weakest Aspect
BM	Like to practice	
	Goal-oriented practice	Mindless practice
	Striving for perfection	Lack of practice skills
	Consistent practice	Giving up on problem areas
	Having fun when practicing	Not much emphasis on technique
	Keeping musicality	Lack of listening
MM	Striving for perfection	Too much pressure on oneself
	Efficient practice	Wasting practice time when not having upcoming deadlines
	Having goals	Not always having specific goals
	Working hard	Depends on the mood of the day
	Listening carefully	Lack of musicality
	Memorizing well	
	Reinforcing everyday	Impatience
	Practicing slowly	Practice too fast
	Learning quickly by deadline	
DMA	Like to practice	Lack of time
	Listening and evaluating	
	Memorizing in a short time	Difficulty in connecting oneself with the music
	Having good practice technique	Not having good practice habits
	Focusing	

In Question 47, six students (37.5%) said that they like to practice. In addition, ten students (62.5%) said that they mostly like to practice. Sixteen participants' responses are shown in Table 7.5.

Table 7.5
Attitude toward practice

Response	All (N=16)	BM (N=5)	MM (N=6)	DMA (N=5)
Yes	6 (37.5%)	3	2	1
Yes mostly	10 (62.5%)	2	4	4
No mostly				
No				

In Question 48, the last question, four students provided additional comments after completing this questionnaire. The comments were generally unrelated to the research focus. However, one BM student suggested, "It's hard to pinpoint what effective practice is and what will make someone a great pianist. I believe that with effective practice and an internal determination and desire, a natural musical intuition [someone] can become a great successful pianist."

Regarding piano playing and practice-related reading, there are differences between academic levels, and this seems to result from taking pedagogy classes. Moreover, according to responses to Question 44, pedagogy classes and teachers' advice help students think about their practice habits. Students need to be introduced to books related to piano playing and practice that will help students learn to think for themselves and try to make improvements. Responses to Question 46, regarding the strongest and weakest aspects of practice, reveal that individual students need a variety of information to improve their practice skills. Here, teachers' understanding of individual students in order to provide individualized instructions for practice is emphasized.

CHAPTER IV

Summary, Conclusions, and Suggestions

Summary

The purpose of this study was to examine piano majors' views on practice and to identify the kinds of information students need to improve their practice. Five BM, six MM, and five DMA students at the University Oklahoma participated in the survey during the Spring 2001 semester. The survey instrument was divided into seven sections: practice time, motivation, and goal-setting; nature of practice; conscious practice; practice organization and pacing; utilization of practice strategies; understanding of personal learning styles; and reading related to practice as well as students' general thoughts on practice. Questions included open-ended questions, scaled items, and checklists.

The participants practice approximately ten to twenty-eight hours a week; however, they think that fifteen to forty hours would be ideal for them. DMA students practice less than MM and BM students do, as a result of their busy schedules and accompaniment responsibilities. Fifteen students (93.25%) think that they need to practice more than they usually do. In particular, all DMA students think that they do not practice enough.

The most common motivational techniques used by the participants are having goals and listening to recordings or peers' playing. Other motivational techniques include personal rewards; achievement and enjoyment; journaling; parental support;

performance; teachers; new repertoire; reducing distractions; and having a good lesson.

Seven students (43.75%) responded that they schedule their practice mostly by setting a daily minimum number of hours. Four students (25%) said that they always have specific goals for practice sessions, and fourteen students (87.5%) said that they have long-term goals in their piano learning. Interestingly, the two students who responded that they have no long-term goals for their piano learning are MM students. The most common long-term goals are performing and teaching. Two students mentioned acquiring independence in learning as a long-term goal.

Eleven students (68.75%) believe that there is a strong connection between their lives and musical learning. They described this connection in many ways. For example, they mentioned reason for being, application to other aspects of life, self-discipline, beauty or enjoyment of life, emotional expression or therapy, enhancing understanding of life, and career as aspects of the connection.

Participants listed things that help them to practice productively. Having goals, utilizing proper practice techniques, having proper practice environment/piano, analysis/score study, memorizing, having enough rest, isolating difficult areas, slow practice, listening, concentration, and having fun are items described as contributing to productive practice.

Students said that while practicing, they always focus on technical difficulties, character of the music, note accuracy, balance of voices, listening, interpretation, tone production, and learning notes. In addition, they sometimes focus on authenticity,

physical coordination, musical architecture, memorization, and tempo consistency. Sight-reading and improvising are the most neglected elements by the respondents.

In the question designed to explore six misconceptions students may have about practice, participants' responses imply that most of them have sound and proper perspectives on practice, although their answers were written with their own ways of understanding the nature of practice. Moreover, their responses do not reveal any differences between academic levels. Instead, the responses reflect individuals' personal experiences and the development of their mental attitudes regarding practice.

Thirteen students (81.25%) said that 0% to 25% of any single practice session is mindless. Two participants (12.5%) responded that 26% to 50% is mindless, and one MM student (6.25%) responded that 51% to 75% is mindless. Listening is the most commonly mentioned technique for conscious practice for MM and DMA students. In contrast, no BM student mentioned "listening" as a technique for conscious practice. Other common techniques that participants mentioned are having goals in practice sessions, analysis, dividing music into working units, experimentation, and mental readiness for practice.

All sixteen students said that they always or sometimes listen to their playing while practicing. Students think that the benefits from listening include listening as audience (objectivity), improving expressiveness and musicality, better focusing, adjusting to various instruments and halls, and inspiring more practice. The most common elements that students listen for are tone quality and the balance of voices. The most commonly mentioned listening techniques are experimentation and concentration.

Fourteen students (87.5%) said that they always or sometimes experiment while practicing. Only one DMA student said that he or she always asks him- or herself how the composer may have intended a work to be played, while one MM student and three BM students said that they never do so. Thirteen students (81.25%) said that they always or sometimes do research about their pieces, and eight students (50%) said that the research helps them improve their playing very much.

Participants (68.75%) normally practice for one to two hours in a single session, and they take breaks every one to one and a half hours (64.29%) for ten or less minutes (84.62%). One DMA student said that he or she does not take breaks while practicing. No students responded that they utilize the seven stages of the practice routine recommended by Parsons.[113] However, four students (25%) said that they have their own practice routines. Three of them start their practice with warm-ups. One of them mentioned that he or she practices in the morning and tries to have review sessions in the afternoon. Further, seven students described their ways of seeking variety and newness in practice. Five of the seven students mentioned that they seek variety and newness through experimentation, listening, and varying practice skills.

Ten students (62.5%) think that they utilize varied strategies enough in their practice. Interestingly, three of five DMA students think that they do not. Based on their responses to questions on specific practice strategies, participants need to utilize more alternative practice strategies such as playing and counting out loud, playing

[113] Albert R. Parsons, *The Science of Piano Practice: An Essay on Proper Utilization of Practice Time* (New York: G. Schirmer, 1886), 26.

passages with the other hand, silent practice on the keyboard, "mistake practice," writing a piece from memory, and writing a practice/lesson log or journal.

Ten students (62.5%) said that they start to memorize after learning their music, while six students (37.5%) answered that they try to learn and memorize music at the same time. Students described a number of things they think contribute to memory slips: nervousness, loss of focus, mental doubting (lack of confidence), lack of concentration, lack of thorough listening in practice, not anticipating what is coming next, playing faster than one is thinking, not knowing the piece well enough, and failure to memorize on several levels cause memory slips. In addition, students described how they try to improve their musical memorization skills. Mental or aural practice away from the piano, memorizing in structural units, making starting points, score study, and harmonic analysis are the common methods mentioned by participants for improving memorization skills. No participants mentioned the value of listening in practice and improvisation skills as possible means of improving memorization skills.

Audiotaping oneself in practice provides many benefits. Primarily, it allows pianists to hear elements of their playing that they do not catch in normal practice. It also allows them to listen from an audience's point of view. However, four students (25%) said that they have never audiotaped their practices.

Use of performance models can also be helpful. Fourteen students (87.5%) said that they always or sometimes use performance models in their practice, and six students (37.5%) thought that it helps very much. According to participants'

responses, BM and MM students use performance models more than DMA students do.

Ten students said (62.5%) that they have experienced self-teaching. Interestingly, four out of five BM students responded positively to this question, while two out of five DMA students responded negatively. Further, only one DMA student said that he or she has experienced self-critiquing.

Students' responses reflect that most of them know their learning styles and their weaknesses in performance. Further, they try to improve their practice productivity. Listening and concentration in practice are commonly mentioned efforts for improving practice productivity.

Two students (13.33%) said that reading about practice helps them very much in practicing effectively. There is a small difference between academic levels in the amount of reading. DMA students had read and recognized more books than BM and MM students did. Fourteen students (87.5%) said that they have thought about their practice strategies and habits seriously when they were preparing recitals, taking pedagogy classes, and being advised by their teachers. Moreover, they described the strongest and weakest aspects of their practice, revealing individual differences but little significant difference between academic levels. The weakest aspects of practice they described are mindless practice, lack of practice skills, lack of listening, not always having specific goals, lack of musicality, practicing too fast, lack of practice time, and difficulty in connecting with the music. In response to the last question, "Do you like to practice?" six students (37.5%) said, "Yes," and ten (62.5%) said, "Yes mostly."

Conclusions

The data reveal that OU piano majors are very well aware of the nature of practice and that they utilize varied strategies in their practice. However, in the following areas, they need to have more information or to be reminded.

1) Most participants recognize the importance of having goals. However, some students need to set long-term goals in piano learning. Further, if students take advantage of practice schedules and of having detailed daily, weekly, and semester achievement goals, their practice would be more productive and it can raise their confidence. Keeping lesson or practice logs as a means of charting progress and motivation will also enhance their productivity. Moreover, if practice sessions were to be organized with various practice activities, such as sight-reading, improvisation, and "repertoire practice," students' practice sessions could enhance musicianship.
2) If students better realized the value of creativity in practice and if they experimented more with varied practice strategies, their practice could be more productive.
3) Ten participants (62.5%) think that they utilize varied practice strategies enough, while two students (12.5%) said that boredom distracts them from practice. Some students need specific practice instructions for solving problems. Furthermore, it could be valuable if part of the lesson time were used as a practice laboratory.

4) Participants' responses imply that they are aware of both the mental and physical aspects of technique. However, they do not seem to fully understand what the mental aspect includes. The whole process of thinking in order to produce an intended sound should be included in the study of piano "technique."

5) Participants know well the importance of listening in practice as a means of motivation, conscious practice, and inspiring more practice. However, they need specific information about the elements to which they should listen. Most students suggested that they listen for tone quality and the balance of voices. In addition, active use of audiotaping in practice needs to be encouraged as a means of intensive listening, self-evaluation, self-teaching, and charting progress.

6) All sixteen participants said that they always or sometimes listen to themselves, while fourteen students (87.5%) said they always or sometimes experiment. More students need to realize the value of the constant process of listening, self-evaluating, experimenting, and self-critiquing.

7) Participants know well what causes memory slips, and they have tried to improve their musical memorization skills. However, some students need to know that learning a piece and memorizing it are not separate processes; for effective memorization they need to let all faculties, eyes, ears, fingers and mind, be used together as soon as possible. Mental practice, score study, intensive listening, and improvisation skills, as important means of improving memorization skills, need to be emphasized by teachers.

8) Students need to realize the importance of awareness in practice and pursue independent study. Twenty-five percent of the participants mentioned that analysis or score study helps conscious and productive practice, and one DMA student said that he or she always tries to understand the composer's intent. At the collegiate level, teachers are not the sole provider of information, and students should be active in acquiring useful information for improving their playing. Research and reading about music are essential. Further, reading about basic educational theories and self-improvement are encouraged to enhance awareness in piano learning.
9) Proper practice room environment and the condition of the piano play an important role in effective practice.

There were not significant differences between academic levels, except for the amount of reading and amount of practice time. DMA students practice less than BM and MM students do, and all DMA students think that they need more practice time. Overall, students' responses reflect variations in educational backgrounds, personal traits and experience, teachers' influence, and the development of their mental attitudes regarding practice. In conclusion, first of all, students should not forget that practice is learning which involves constant goal setting and active listening. They should strive to educate themselves in such things as the ability to tolerate stress, concentration skills, and time management skills, as well as work to improve their practice skills and finally, to internalize the best practice skills. Piano teachers need to know how individual students practice and to help students discover

their own best ways of practice by giving practice prescriptions based on communication and observation.

Suggestions for further study

This survey had three limitations: 1) the survey instrument had several unclear questions and indirect questions, and some response categories were not clear enough to collect detailed answers; 2) the small number of participants reduces generalizability of the findings; and 3) as mentioned in Chapter One, data from verbal descriptions of behaviors shows only moderate correlation to actual behaviors. However, further research into related areas could enhance the usefulness of this study. Future studies might be conducted in the following areas:

1) Students' responses reflect that the practice room environment does affect their practice productivity. Hence, studies of practice room environment can be conducted through interviews or controlled research.
2) Students' ideas and opinions on practice reflect their teachers' influence. Hence, through comparison between students from different studios, various teaching methods can be assessed. For example, utilizing the questionnaire that this researcher designed in several other universities could be a possibility. Further, comparison between teachers' instruction and students' practice behaviors can be conducted through lesson observation, practice observation, and interviews.

3) In particular, BM students' responses were quite different from the researcher's own ideas when she was an undergraduate. Different educational backgrounds may allow students to develop different perspectives on practice. Comparison between Asian students' practice behaviors and those of American students can provide valuable information that teachers can use to improve their teaching effectiveness.
4) The data collected through the questionnaire imply that taking pedagogy classes might affect students' views on practice. Comparison between students who take pedagogy classes and students who do not can offer valuable information for teachers to provide better practice suggestions.
5) Actual observation of students' practice sessions could provide valuable information. One student from each academic level could be observed during practice sessions over an extended experimental period. Miklaszewski's study[114] could be a model for such research.
6) This study revealed that students think listening while practicing is helpful for improving performance. A study of how students listen to themselves while practicing could be conducted in the field of piano study. Williams' study,[115] using taped comments and interviews, could be a model for such research.

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[114] Kacper Miklaszewski, "A Case Study of a Pianist Preparing a Musical Performance," *Psychology of Music* 17 (1989): 95-109.

[115] David A. Williams, "Listening While Performing: Music Learning Process as Revealed Through Verbal Reports of Wind Instrumentalists During Rehearsals" (Ph.D. diss., Northwestern University, 1997).

7) A study similar to the research by Thompson, Diamond, and Balkwill[116] could be undertaken with college piano majors on the use of model performances. It could be helpful to pinpoint the elements in model performances to which students listen most closely and assess the usefulness of their listening.

8) Two or three different conditions of audiotaping in practice could be compared in order to assess effective uses of audiotaping in practice.

9) No participants mentioned that they keep lesson or practice logs. Controlled research on the use of lesson/practice logs could be conducted.

10) Fifty percent of the participants said that they do not know whether they are holistic, serialistic, or versatile learners. Hallam said that the highest level of intellectual development can be attained most reliably by holistic or versatile learners.[117] Hence, studies on collegiate piano majors' approaches to the learning and interpretation of music would be valuable.

11) Participants' responses in the survey suggest the possibility of utilizing a diagnostic questionnaire to enhance understanding of new students' practice behaviors. The questionnaire could help teachers understand new students' personal traits and practice habits in order to give proper practice instructions.

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[116] William F. Thompson, C. T. Patrick Diamond, and Laura-Lee Balkwill, "The Adjudication of Six Performances of a Chopin Etude: A Study of Expert Knowledge," *Psychology of Music* 26 (1998): 154-74.

[117] Susan Hallam, "Professional Musicians' Approaches to the Learning and Interpretation of Music," *Psychology of Music* 23 (1995): 111-28.

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APPENDIX A

SURVEY QUESTIONNAIRE

QUESTIONNAIRE

Questionnaire Instructions

Thank you for participating in this survey. The following questionnaire is designed to find out how piano majors practice. Please answer each question according to the directions and after considering how you usually practice. Try to be as honest as possible about how you actually practice. Your answers will be kept completely confidential.

1) Identify your degree program and academic level.

___DMA
___MM
___BM
___Freshman ___Sophomore ___Junior ___Senior

2) How many hours do you normally practice a week? _____Hours

3) Do you believe that you practice enough to achieve your musical goals? (Check one)

___Yes
___Yes mostly
___No mostly
___No

If no, why can you not practice enough? (Check all that apply)

___Busy schedule
___Lack of motivation
___Accompanying responsibility
___Others (Specify) _____

---

4) How many practice hours a week would be ideal for you? _____Hours

5) How do you motivate yourself to practice? (Specify)

If necessary, continue on the back page.

6) Do you schedule your practice according to a consistent plan? (Check one)

___Yes
___No

If yes, how do you schedule? (Check all that apply)

___Daily plan for each piece
___Weekly plan for each piece
___Setting a daily minimum number of hours
___Setting a weekly minimum number of hours
___Others (Specify)_____

_____

7) Do you have specific goals in each practice session? (Check one)

___Always
___Sometimes
___Not at all

8) Do you have long-term goals in your piano learning? (Check one)

___Yes
___No

If yes, please describe what kind of goals you have.

_____

_____

_____

9) How much of a connection do you feel between your life and your musical learning? (Check one)

___Strong connection
___Some connection
___No connection
___Never thought about it

If there is a connection, please describe it.

_____

_____

_____

If necessary, continue on the back page.

10) Please list up to 5 things that you think help you practice productively.

_____

_____

_____

_____

_____

11) When you practice, on what elements do you focus most strongly?
(Check one for each item)

	Always	Sometimes	Never
Learning Notes	___	___	___
Note Accuracy	___	___	___
Technical Difficulties	___	___	___
Authenticity (Performance Practice)	___	___	___
Tone Production	___	___	___
Character of the Music	___	___	___
Balance of Voices	___	___	___
Musical Architecture	___	___	___
Tempo Consistency	___	___	___
Physical Coordination	___	___	___
Listening to Yourself	___	___	___
Memorization	___	___	___
Interpretation	___	___	___
Sight-reading	___	___	___
Improvising	___	___	___
Others (Specify)	___	___	___
_____	___	___	___
_____	___	___	___
_____	___	___	___

12) Considering your personal experience in practicing, do you agree with the following statements? Please use the following key in your response:

A=Agree DS=Disagree Somewhat
AS=Agree Somewhat D=Disagree

Check only one for each statement and explain why you agree or disagree in the space provided.

a) Practice is essentially a physical activity. __A __AS __DS __D

_____

_____

b) The most important goal of practice is the elimination of mistakes.
__A __AS __DS __D

_____

_____

c) Mechanical repetition provides a direct route to fine performance.
__A __AS __DS __D

_____

_____

d) Fingers should be the focus of piano technique. __A __AS __DS __D

_____

_____

e) The level of expertise achieved is directly related to the amount of practice undertaken.
__A __AS __DS __D

_____

_____

f) A good piano performance is possible and appropriate only for special students, namely, the so-called talented. __A __AS __DS __D

_____

13) Considering your personal experience in practicing, what percentage of a typical practice session do you think is "mindless practice"? (Check one)

___ 0-25 %
___26-50 %
___51-75%
___76-100%

14) Can you list some practice strategies that help you achieve "conscious practice (as oppose to 'mindless practice')"?

_____

_____

_____

_____

_____

15) How often, if ever, do you listen carefully to your playing while practicing? (Check one)

___Always
___Sometimes
___Never (If Never, please go to question 18)

16) Please describe specifically how you listen to your playing while practicing.

_____

_____

_____

_____

17) How do you benefit from listening to your playing?

_____

_____

_____

If necessary, continue on the back page.

18) How often, if ever, do you experiment in your practice? (Check one)

___Always
___Sometimes
___Never

19) How often, if ever, do you ask yourself how the composer may have intended a work to be played rather than how your teacher told you to play it? (Check one)

___Always
___Sometimes
___Never

20) How often, if ever, do you research or read about the pieces you play? (Check one)

___Always
___Sometimes
___Never

21) How much do you think that research helps you improve your playing? (Check one)

___Very much
___Some
___Not at all

22) How long do you normally practice in a single session? _____

23) Do you take breaks when practicing? (Check one)

___Yes If yes, how often is the break? _____

If yes, how long is the break? _____

___No

24) Do you have a sequential practice routine? (Check one)

___Yes
___No

If yes, please describe it.

_____

_____

_____

_____

_____

25) Do you seek variety and newness in each practice session? (Check one)

___Yes
___No

If yes, how do you do that? (Specify)

_____

_____

_____

26) How frequently do you use each of the following practice strategies? (Check one for each)

O=Often S=Sometimes N=Never

Repetition	O	S	N
Slow practice	___	___	___
Hands separately	___	___	___
Isolation to solve troublesome passages	___	___	___
Playing and counting out loud	___	___	___
Singing one part	___	___	___
Blocking	___	___	___
Simplification of texture (playing the skeleton of a passage)	___	___	___
Playing the harmonic structure	___	___	___
Trying out redistribution of notes with the hands	___	___	___
Experimenting with different fingerings	___	___	___
Practicing in rhythmic variants	___	___	___
Playing with varying tempo	___	___	___
Shifting accents	___	___	___
Playing passages with other hands	___	___	___
Playing with different dynamics than those written in the score	___	___	___
Playing with different articulations than those written in the score	___	___	___
Starting at the end and working back	___	___	___
Hearing an aural image before playing	___	___	___
Stopping and preparing for what is coming	___	___	___
Silent practice on the keyboard	___	___	___
"Mistake practice" to gain experience dealing with wrong notes	___	___	___
Mental rehearsal away from the piano	___	___	___
Writing a memorized piece from memory	___	___	___
Aural image of a model performance	___	___	___
Pretending it's a real performance	___	___	___
Writing a practice journal or log	___	___	___
Writing a lesson journal or log	___	___	___

If necessary, continue to list practice strategies on the back page.

27) When do you try to memorize music? (Check one)

___Learning music and memorizing at the same time
___After learning the music
___Others (Specify)_____

_____

28) What do you think causes memory slips? (Specify)

_____

_____

_____

_____

29) How do you try to improve your musical memorization skills? (Describe)

_____

_____

_____

30) How often, if ever, do you audiotape your practice? (Check all that apply)

___Always
___Sometimes
___Before public performance
___Never

31) How, if at all, do you think audiotaping helps your practice? (Describe)

_____

_____

_____

32) How often, if ever, do you use great pianists' recordings as your models? (Check all that apply)

___Always
___Sometimes
___Before public performance
___Never

33) How much do you think model recordings help your practice? (Check one)

___Very much
___Some
___Not at all

34) Do you ever imagine that your teacher or an imaginary great pianist is in the practice room to critique you when you practice? (Check one)

___Yes
___No

If yes, how does it help? (Specify) _____

_____

_____

_____

_____

35) When you practice, do you ever pretend you are your own teacher? (Check one)

___Yes
___No

If yes, how does it help? (Specify) _____

_____

_____

_____

_____

36) Do you think that you utilize varied practice strategies enough? (Check one)

___Yes
___Yes mostly
___No mostly
___No

37) Do you know whether you are a holistic (general to detail), serialistic (detail to general), or versatile (a combination of the two) practicer? (Check one)

___Yes
___No
___Never thought about it

38) Do you know whether you are a visual learner, aural learner, or tactile learner? (Check one)

___Yes
___No
___Never thought about it

39) Do you know at what times of day you can better concentrate on practice? (Check one)

___Yes
___No
___Never thought about it

40) What do you think distracts you when practicing? (Specify)

_____

_____

_____

_____

41) Do you think you have weaknesses in performance that result from inappropriate or ineffective ways of practice? (Check one)

___Yes
___No

If yes, please describe. _____

_____

_____

_____

42) How do you try to improve your practice efficiency and effectiveness? (Describe)

_____

_____

_____

_____

_____

43) For each of the following books, please describe your reading with these letters.

E=Read entire book H=Heard of book but not read
P=Read part of book N=Never heard of book

	E	P	H	N
The Art of Practice (Madeline Bruser)				
The Art of Playing (George Kochevitsky)	___	___	___	___
Developing Piano Performance (Max Camp)	___	___	___	___
Famous Pianists and Their Technique (Reginald R. Gerig)	___	___	___	___
How to Practice (Hetty Bolton)	___	___	___	___
Interpretation in Piano Study (Joan Last)	___	___	___	___
Music at Your Fingertips (Ruth Slenczynska)	___	___	___	___
On Memorizing and Playing from Memory and on the Laws of Practice Generally (Tobias Matthay)	___	___	___	___
On Piano Playing (Gyorgy Sandor)	___	___	___	___
The Musician's Practice Log: A Completely New Way to Increase Your Practice Effectiveness (Burton Kaplan)	___	___	___	___
The Pianist's Problems (William Newman)	___	___	___	___
Playing the Piano with Confidence (Gerald D'Abreu)	___	___	___	___
Questions and Answers (Frances Clark)	___	___	___	___
With Your Own Two Hands (Seymour Bernstein)	___	___	___	___

In addition to these books, have you books or articles on practice to recommend? If so, please write their titles or authors on the back page even if you are not quite sure of the exact titles and authors.

44) How much, if at all, do you think reading about practice helps you practice effectively? (Check one)

___Very much
___Some
___Not at all

45) Have you ever thought about your practice strategies or habits seriously before participating in this study? (Check one)

___Yes, a lot
___Yes, some
___No

If yes, please explain.

_____

_____

_____

46) What do you think are the strongest aspects and weakest aspects of your practice? (Describe)

_____

_____

_____

_____

_____

_____

47) Do you like to practice?

___Yes
___Yes mostly
___No mostly
___No

48) Please use this space to make any comments after answering this questionnaire.

APPENDIX B

PIANO MAJOR COVER LETTER

PIANO MAJOR COVER LETTER

February, 2001

Dear OU Piano Major:

My name is Nuyi Kong, and I am a DMA student in piano performance and pedagogy here at OU. Currently, I am conducting a survey on piano students' practice. Information from this survey will help piano teachers understand better how to help their students practice effectively. The focus of this survey will be on how students think about practice in general and how they utilize various practice strategies when they practice. The results of this survey will be used for my DMA document.

Students majoring in piano performance or piano performance/pedagogy in residence during the Spring 2001 semester at the University of Oklahoma are asked to participate in this survey. Students will be asked to observe and think about their own practice habits. I would like to invite you to be a part of this survey. I realize that your schedules are busy, but ask that you take approximately one half to one hour to complete the questionnaire. Please share your honest thoughts and take the time to carefully observe yourself while practicing. I believe that this is a valuable opportunity for you to reflect on your practice habits and strategies.

Your responses will remain completely confidential. Your name will not be disclosed to anybody, nor will it be used in the resulting document. Please complete this questionnaire and return it to my mailbox in the School of Music Office in Catlett Music Center by February 26, 2001.

If you have any questions about the questionnaire, please e-mail me at nkong@ou.edu. Moreover, if you want to receive a summary of the results, please e-mail me by April 30, 2001 with your request. Your cooperation and your time will be greatly appreciated. I am looking forward to receiving your ideas on practice.

Sincerely,

Nuyi Kong

Enclosure: Questionnaire

APPENDIX C

SURVEY QUESTIONS BY TOPICS

SURVEY QUESTIONS BY TOPIC

Section I. Questions on degree program identification	Q1
practice time	Q2-4
Motivation	Q5
goal-setting	Q6-9
Section II. Questions on the nature of practice	Q10-12
Section III. Questions on conscious practice	Q13-14
listening	Q15-17
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research on music	Q19-21
Section IV. Questions on practice organization and pacing	Q22-25
Section V. Questions on specific practice strategies	Q26
memorization	Q27-29
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self-critiquing and self-teaching	Q34-35
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Section VI. Questions on understanding of personal learning styles	Q37-38
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efforts to improve practice effectiveness	Q41-42
Section VII. Questions on reading related to practice	Q43-44
students' general thoughts on practice	Q45-47
students' additional comments regarding the survey	Q48

APPENDIX D

PILOT TEST COVER LETTER

PILOT TEST COVER LETTER

February, 2001

Dear_____:

I am surveying piano majors at the University of Oklahoma to determine their views toward practicing the piano. The survey will be the basis of my DMA document. To determine if the questions are ambiguous, redundant, or difficult to understand, I am pilot-testing the survey with a retired professor and three Ph.D. students at the University of Oklahoma.

In the space beneath each question, please comment regarding clarity, redundancy, available space for answers, ease of answering the questions, and any other reactions you have. Your suggestions will be incorporated into a revision of the questionnaire. Please return your responses to me in the enclosed self-addressed, stamped envelop by Feb. 12, 2001. Thank you for your assistance.

Sincerely,

Nuyi Kong

Enclosures: Pilot Questionnaire
SASE

APPENDIX E

ADDITIONAL PARTICIPANTS' COMMENTS

Question 29

1) I'm trying to learn to memorize as I learn – consciously tries [*sic*] to memorize by looking. (BM)
2) I visualize the music in my head, making sure I can see all music, notes, and chords in my head. I study the music when I'm not at the piano. I work smaller sections. I examine all the subtle differences. I also find knowing the harmonic analysis helps to memorize. (BM)
3) I practice starting in different places, going from the end to the beginning and do aural practice away from the piano. (BM)
4) Trying to sing and play individual voices away from music. (BM)
5) Pay attention to the piece as a whole and do not leave out any section. (BM)
6) Listen and learn from many good recordings. Also, I sometimes hum the melody of my music, while doing something that is not that stressful. (MM)
7) Start memorizing as early as possible, using different ways to reinforce and test my memory. (MM)
8) Unfortunately, I am looking for a way that I can improve my speed and capacity to memorize. (MM)
9) I don't work on it because I have never had a problem with memorizing. (MM)
10) Mental rehearsal away from the piano. Score studying. (MM)
11) Score study, starting spots, understanding of the music from the large form down to details. (DMA)
12) Make starting points. (DMA)
13) Memorize in structural units – treat these units as bits in a jigsaw puzzle. Practice putting them together in random order will enhance one's sense of harmonic and formal structures. (DMA)
14) Play in public more. (DMA)
15) More mental practice and run-throughs for people. (DMA)

Question 40

1) When I have a million other things to do, it's hard to concentrate. When I know others may be listening. When I haven't gotten enough sleep and I just sit there thinking how tired I am. (BM)
2) Hunger, the need to use the restroom, stray thoughts, sometimes boredom, fatigue. (BM)
3) If it's a really nice day, I have difficulty staying inside. Also, if I have exciting plans for later on in the day, I have trouble being distracted [*sic*]. (BM)
4) I do know. I guess I really focus and concentrate, and really want

something done, very seldom I'll get distracted. It's only when I am on the "mindless – practice" mode that I'll be distracted. And I guess anything could distract me when I am in the mindless mode. (BM)

5) Noise from other practice rooms – too much activity outside. (BM)
6) Tiredness. Thoughts running through my head that aren't music–related. (MM)
7) When I have a million things to do. Sometimes when I am tired. The players in the other practice rooms. (MM)
8) Things I need to do. Things on my mind. (MM)
9) The sound of others practicing can be a real distraction for me. Sometimes, visiting friends can distract my practice but more often than not, I'm happy to see them. (MM)
10) Tiredness, boredom, lack of motivation. (MM)
11) When friends come chat with me (Oftentimes I bug them, though!) Also, when I have a bad day, my playing is affected somehow! (MM)
12) Stressed out about other academic works. Worried about life in general especially financial problems. (DMA)
13) Interruptions at the office! (DMA)
14) Phone, visitors, thoughts about all the other things that need to be done. (DMA)
15) Grant! (Friends) Inappropriate practice habits. (DMA)
16) Bad condition piano [*sic*]. (DMA)

Question 42

1) I improve my practice by constantly listening and working to make my playing better. Although sometimes breaking sections, phrases into smaller parts is boring, it really helps. So I try to do that a lot. I try to improve by constantly keeping my goals in mind and knowing that each day counts. (BM)
2) My teacher constantly gives me new ways to practice, and I try to incorporate them into my practice. (BM)
3) I always try to listen more. The more that I hear, then I have more to work with. (BM)
4) By really concentrating and not letting trouble spots and mistakes slip by. By trying different approaches to practicing. (BM)
5) Sleep enough. Practice as early in the day as possible (MM).
6) I try to concentrate and block out distractions. I also try not to give up so easily. (MM)
7) I try to keep existing and not too redundant [*sic*]. (MM)
8) I try to avoid just playing notes. My new practice habits involve listening skills, tone control, gaining confidence, imagery. I also try to stop practicing when I lose concentration or inspiration. (MM)
9) I try to work on detail and critical listening more than I used to.

(MM)

10) Setting a goal got myself [*sic*]. For instance, I tell myself that I must at least overcome two tricky spots in a day and when the end of semester rolls along, I'm all prepared. (MM)
11) Look for more time. (DMA)
12) Find time – quantity and quality. Practicing in sections in different order. More mental practice before I go to the piano. (DMA)
13) Steady schedule. (DMA)

Question 46

1) I wish my practices were twice as efficient. I want to cut down on the "mindless practice." I need to start beginning [*sic*] each practice session. (BM)
2) Strongest Aspects – I'm very goal-oriented and I strive for perfection. I work until I like what I hear. I like practicing. My practice habits are weak though, because sometimes I don't know exactly how to fix the problems or achieve the sound I want. Sometimes I try to avoid the problems and tell myself – oh, I'll catch that later – and skip problem areas. (BM)
3) My weakest aspect is that I don't listen enough when I'm first learning a piece. My strongest aspect is that I'm consistent with my practice and that I have fun when I practice. (BM)
4) I always keep musicality as a focus in practicing, but I don't put as much emphasis on technique as I should. (BM)
5) I think I am a perfectionist and I want to get things done quickly. Because of this trait, I think I don't have a problem dreading practice time. I love to practice because I love piano. However, the downfall is that I sometimes put too much pressure on myself that I actually was diagnosed with carpal tunnel syndrome [*sic*]. (MM)
6) Don't always have specific goals. (MM)
7) Strongest aspects: I work hard, listen carefully, memorize well, and try to reinforce every day. Weakest: very impatient and sometimes practice too fast without necessarily listening attentively [*sic*]. (MM)
8) Strongest: when pushed by a deadline (recital, competition) I learn quickly and efficiently. Weakest: when I do not have an upcoming event, I tend to waste time by simply playing with no intention of getting better. (MM)
9) I think my strongest aspect is my ability to use slow practice to effectively get a piece "under my fingers," however, after that I have trouble keeping things exciting, memorizing [*sic*], and I often forget to consider musicality as I practice. (MM)
10) When I am in the mood or inspired, I practice very, very effectively. I feel that I can accomplish anything at these times. Unfortunately, I don't always feel inspired or in the mood. (MM)
11) I love to practice, but one of my current weaknesses is finding blocks

of time to devote to it. I tend to play through things too much, but I am always listening and evaluating, which is one of my strongest aspects. (DMA)

12) Strongest aspects: able to memorizing a new repertoire in short period of time. At the same time, it can also be my weakest aspect because I don't allow myself enough time to study and to get to know the music, to 'connect myself' with the music. Sometimes, the result can be truly mechanical. (DMA)
13) As an accompanist, I play many pieces of music. When I recognize the need of practicing, I can usually get to the heart of the problem and fix it. For long-range practice, I have developed some good practice techniques, but the scheduling of TIME is my biggest problem. (DMA).
14) Strong – I usually focus. Weak – Don't practice enough; not good practice habits. (DMA)

APPENDIX F

PERMISSION TO CONDUCT RESEARCH

The University of Oklahoma

OFFICE OF RESEARCH ADMINISTRATION

February 16, 2001

Ms. Nuyi Kong
138 West Constitution #E
Norman OK 73072

Dear Ms. Kong:

Your research application, "University Students' Views on Piano Practicing: A Survey of Piano Majors at the University of Oklahoma," has been reviewed according to the policies of the Institutional Review Board chaired by Dr. E. Laurette Taylor and found to be exempt from the requirements for full board review. Your project is approved under the regulations of the University of Oklahoma - Norman Campus Policies and Procedures for the Protection of Human Subjects in Research Activities.

Should you wish to deviate from the described protocol, you must notify me and obtain prior approval from the Board for the changes. If the research is to extend beyond 12 months, you must contact this office, in writing, noting any changes or revisions in the protocol and/or informed consent form, and request an extension of this ruling.

If you have any questions, please contact me.

Sincerely yours,

Susan Wyatt Sedwick

Susan Wyatt Sedwick, Ph.D.
Administrative Officer
Institutional Review Board

SWS:pw
FY01-229

cc: Dr. E. Laurette Taylor, Chair, Institutional Review Board
Dr. Edward Gates and Dr. Jane Magrath, Music

1000 Asp Avenue, Suite 314, Norman, Oklahoma 73019-0430 PHONE: (405) 325-4757 FAX: (405) 325-6029

The University of Oklahoma

OFFICE OF RESEARCH ADMINISTRATION

February 23, 2001

Ms. Nuyi Kong
138 West Constitution #E
Norman OK 73072

SUBJECT: "University Students' Views on Piano Practicing: A Survey of Piano Majors at the University of Oklahoma"

Dear Ms. Kong:

The Institutional Review Board has reviewed and approved the requested revision(s) to the subject protocol.

Please note that this approval is for the protocol and informed consent form initially approved by the Board on February 16, 2001, and the revision(s) included in your request dated February 19, 2001. If you wish to make other changes, you will need to submit a request for revision to this office for review.

If you have any questions, please contact me at 325-4757.

Sincerely yours,

Susan Wyatt Sedwick

Susan Wyatt Sedwick, Ph.D.
Administrative Officer
Institutional Review Board-Norman Campus

SWS:pw
FY01-229

cc: Dr. E. Laurette Taylor, Chair, IRB
Dr. Edward Gates and Dr. Jane Magrath, Music

1000 Asp Avenue, Suite 314, Norman, Oklahoma 73019-0430 PHONE: (405) 325-4757 FAX: (405) 325-6029