Chapter 3: Method

Study Objectives

The purpose of this study was to test the effectiveness of a seminar designed to help musicians get performance anxiety under control and enhance their musical performance. The design called for random assignment of the students to either a treatment or control group, and a comparison of the two groups after treatment. As the study progressed, it became apparent that the control group in this setting had really evolved into a second treatment group, working on getting performance jitters under control by informal practice performances.

Al Harrison, the Chairman of the Music Department at Taylor University, was concerned that the students in the control group also feel that they were receiving something beneficial, otherwise, they might drop out of the study or refuse to cooperate. I, therefore, asked Kerchal Armstrong, the faculty instructor for the control group, to challenge his students in the group to grapple with the symptoms of performance anxiety as they practiced performing. (See Appendix Y for the contents of his instructions.) This approach was based upon the premise that practice performance in non-threatening situations would help them build their confidence in front of an audience. The control group, thus, actually became another treatment group. The study, consequently, compares the effectiveness of two different treatments for musical performance anxiety:

1) Informal Practice Performance and a

2) Coping Skills Seminar.

Did either of these treatments help reduce maladaptive performance anxiety and enhance musical performance?

Study Design

A pretest-posttest experimental design was utilized. Two dependent variables were evaluated, based on perceptions of the student performers and their instructors:

1) musical performance anxiety and

2) musical performance quality.

The independent variable was the treatment:

1) Informal Practice Performance, a class offered to Treatment Group I.

2) Coping Skills Seminar offered to Treatment Group II.

The two treatment groups were given equal attention and time (two one-hour sessions) offered simultaneously in separate rooms.

Participants

Thirty-five music majors at Taylor University completed the study as part of their semester requirements: 17 males and 18 females, 18 vocal majors, 7 piano majors, and 9 instrumental majors (brass, woodwind, string, and guitar). Of the 35 students participating, there were 13 freshmen, 9 sophomores, 12 juniors, and 1 senior. Because seniors were not required to participate in performance classes, we were unable to collect the necessary pretest/post-test data to include more than one senior in the experiment. We did not use senior recitals as post-test data for the following two reasons: 1) Senior recitals typically require a minimum of thirty minutes of music as compared with 2-5 minutes in a typical performance class. 2) Senior recitals are big events, often with family and friends attending from out of town, formal attire, formal receptions, and professional recordings, and thus, far beyond the scope of performing one piece in a performance class or jury, presenting much greater stress than an informal performance class.

Procedure

Instructions to Participants

A letter (Appendix A) was sent to all music faculty members informing them of the nature of the experimental study. I then met with the faculty to present my proposal for an experimental study and to answer any questions they might have. They enthusiastically approved the study and offered their input. A letter (Appendix C) was then sent to all applied music students informing them of the nature of the experimental study. At the first Performance Class, February 17, 2000, Al Harrison, Chairman of the Music Department, announced that the department was cooperating in a study of performance anxiety. He told the students that this experimental study would provide them a unique opportunity that could possibly be of great benefit to them personally, and asked for their full cooperation. He made it clear that this was part of their performance class requirements for the semester as music majors. He introduced me to the students as a former college music professor, who was now doing this experimental study as part of the requirements for a doctorate at Virginia Tech. I was then given time to introduce the study and to communicate our expectations (See Appendix D for the contents of that speech).

I gave them each a copy of the student questionnaire (Appendix J) and explained that they would answer these questions after each of two performances this semester. I explained that they would be asked to report to the table in the back of the recital hall immediately after each performance and fill out the questionnaire. I thanked them in advance for their cooperation in this, and asked them to be totally honest in reporting their feelings when filling out the questionnaires. I assured them that their responses would be absolutely confidential, and have no bearing on their grades; furthermore, the faculty would not be allowed to read the student responses, but would be answering the same nine questions from their perspective. I then gave the following introduction to our study topic:

> Performance anxiety can be compared to fire. Fire under control in the fireplace provides warmth, ambience, romance, and is even useful for cooking. Fire out of

> control can burn the house down. Likewise, performance anxiety under control can be beneficial and even enhance your performance. Our goal is to provide you with some tools, some coping skills to help you get performance anxiety under control. It is possible that the majority of your performance anxiety is due to inadequate preparation. (Appendix M)

I then gave them a handout entitled "Musical Preparation" (Appendix G) and briefly summarized how to adequately prepare for performances this semester. I stressed this as a key to preventing a majority of their performance anxiety problems. I distributed Student Demographic forms (Appendix I) and asked them to please complete the information by the end of the student performances of that day and leave them on the table at the back of the recital hall. A total of 56 Student Demographic forms were collected.

Measurement

Ideas for the Performance Evaluation Questionnaire were gleaned from the 20 questions in "Performance Anxiety Inventory" by Nagel, Himle, and Papsdorf (1981), and Wolfe's "Musical Performance Anxiety Scale" (1989), which was adapted from Sweeney and Horan's "Piano Performance Anxiety Scale" (1982). The nine questions on the Teacher Questionnaire (Appendix L) mirrored the Student Questionnaire (Appendix J), so that both the student and teacher perspectives would be represented in measuring the two dependent variables. A 5-point scale was used for both student and teacher questionnaires:

0=STRONGLY DISAGREE	"Absolutely not!"
1=DISAGREE	"I don't think so."
2=AGREE	"I think so."
3=STRONGLY AGREE	"Definitely yes!"
4=DO NOT KNOW	"I have no clue."

The first two statements on the Student Questionnaire and two equivalent statements on the Teacher Questionnaire measured musical preparation in this study:

1) I (my student) was well rehearsed and musically prepared for this performance.

2) I (my student) performed the solo quite well in the previous private lesson.

Four statements on the Student Questionnaire and four equivalent statements on the Teacher Questionnaire measured performance anxiety:

3) "I felt (My student seemed) tense and nervous while performing in my latest private lesson."

4) "I (My student) was under a lot of pressure to do well on this performance."

5) "Minutes prior to the performance I felt (my student seemed) very nervous and out of control."

6) "Throughout my performance today I felt (my student seemed) confident and in control."

Performance anxiety in this study could vary from 0 to 4 points on each of the eight questions for a possible total of 0-32 points. Note that question #4 takes a reverse approach (positive instead of negative) regarding performance quality. The following adjustment formula was, therefore, used for question #4:

strongly agree = 1 point

agree = 2 points

disagree = 3 points

strongly disagree = 4 points

To differentiate "do not know" from "strongly disagree", the responses of "do not know" in all questions were adjusted to 0 points, making necessary an additional adjustment of adding one point to each of the other responses. The complete Adjustment Table may be found in Appendix Z.

RECORDED	REVERSE ADJUSTMENT (Questions # 6 and #8)
0	3
1	2
2	1
3	0

RECORDED	ADJUST (Add 1 point to all questions except 4 = 0)
0	1
1	2
2	3
3	4
4	0

Three statements on the Student Questionnaire and three equivalent statements on the Teacher Questionnaire measured performance quality in this study:

7) "I am pleased with my (student's) performance today."

8) "Today's performance was inferior compared to that in my (the) previous private lesson."

9) "Today's performance seemed to be enhanced by my (student's) nervous energy."

Framing the questions in this manner would allow for differing levels of ability and difficulty of the music being performed. Performance quality in this study, therefore, was defined to be an evaluation of each student's performance based on ability, progress, and the music performed, rather than a comparison or competition with other students. Performance quality responses could vary from 0 to 4 points on each of the six questions for a possible total of 0-24 points.

Note that question #2 takes a reverse approach (negative instead of positive) regarding performance quality. The following adjustment formula (see Appendix Z) was therefore used for question #2: strongly agree = 1 point, agree; agree = 2 points; disagree = 3 points; and strongly disagree = 4 points. A response of "do not know" in all questions was adjusted to 0 points. An additional adjustment of adding one point to each of the responses other than "do not know" was necessary to differentiate "do not know" from "strongly disagree".

Interval Scale of Measurement:

The data collected and measured from the questionnaires would qualify as an Interval Scale of Measurement, based on equal units of measurement indicating a relative amount of a given characteristic. It lacks a true zero (or complete absence of a trait), and a measure of 20 does not mean that a person has twice as much of the trait as someone with a score of 10. Psychological tests are interval scales and have this limitation; but they can be added, subtracted, multiplied, and divided. Interval scales can and should use parametric tests to determine the significance of differences, such as the t-tests employed in this study.

Pretest Procedures

After each student performed, he or she exited the recital hall platform and returned to the back of the recital hall to complete the Student Questionnaire. Each private music instructor in the recital hall completed a Teacher Questionnaire regarding the student's performance. Instructors not present were asked to watch a video of the student's performance prior to completing the questionnaire. This occurred seven times.

Group Assignment

All students continued to receive their normal classes and private music instruction during the experiment. After each student had performed once in a student recital, the data from the student questionnaire was used to rank the students numerically from low-anxiety to high-anxiety levels. Subjects were paired as closely as possible according to: 1) level of anxiety, 2) gender, 3) instrument, and 4) class rank. The matched pairs were then randomly assigned to either the Treatment Group I or II thus making the groups similar regarding these four parameters.

	TREATMENT GROUP I	TREATMENT GROUP II
TOTAL	17	18
MALE	8	9
FEMALE	9	9
VOCAL	9	9
PIANO	2	5
INSTR	6	4
FRESHMEN	6	7
SOPHOMORES	5	4
JUNIORS	6	6
SENIORS	0	1

Though the groups were fairly well matched, random assignment was important to help minimize the effects of independent variables such as: differences in musical training and ability, performing experience, and difficulty of the music.

A t-Test for Two Correlated Samples (APPENDIX GG) compared the pretest anxiety scores of the two groups to make sure they were not significantly different prior to the treatments. It yielded a t-ratio of -1.25 which was not statistically significant. With 33 degrees of freedom, the critical t-value indicates that a t<=-2.035 or >=2.035 is required for statistical significance at the .05 level for a two-tailed test. Consequently, there is no significant difference in pretest anxiety between the seminar group and the practice performance group. The two groups are equivalent in pretest musical performance anxiety.

Another t-Test for Two Correlated Samples (APPENDIX HH) compared the pretest quality scores of the two groups to make sure they were not significantly different prior to the treatments. It yielded a t-ratio of -1.30 which was not statistically significant. With 33 degrees of freedom, the critical t-value indicates that a t<=-2.035 or >=2.035 is required for statistical significance at the .05 level for a two-tailed test. Consequently, there is no significant difference in pretest anxiety between the seminar group and the practice performance group. The two groups are equivalent in pretest musical performance quality.

Treatment

After Spring break, on April 6 and 13, 10:00-10:50 am, Treatment Group I participated in Informal Practice Performance Sessions in the Recital Hall while Treatment Group II attended the Performance Anxiety Coping Skills Seminar in the Band Room. Kerchal Armstrong, an adjunct music professor at Taylor University, led the Informal Practice Performance Sessions (Appendix Y). Keith Currie, the researcher in this study, presented the Performance Anxiety Coping Skills Seminars (Appendix M-X).

Treatment Group I students had the opportunity to perform informally with their peers for approximately two minutes in each of two sessions. They were asked to perform something that they were confident with: a warm-up routine, scales, etude, solo piece, etc. (see Appendix Y). The two informal practice performance sessions were presented as opportunities for them to get their performance jitters under control and use them to their advantage. A videotape of the sessions was made for the benefit of any students unable to attend the seminar when it was presented. One student checked the video out of the music office.

Group II students met with me in the Band Room for Seminar (Part One). I introduced them to the seminar and shared personal testimony of my experience with performance anxiety. I distributed a written synopsis (Appendices M-R) of the first seminar session as an outline for the seminar and to use for possible review and further study on their own. In the second session, one week later, I presented to the students in Group II materials gleaned from various research studies, and reviewed the concepts presented in session one (see Appendices S-X). The first and second seminars were videotaped for the benefit of any students unable to attend each seminar when it was presented. A total of seven students checked out one of the two videos from the music office.

Posttest Procedures

Posttest questionnaires were completed in the same manner as the pretest questionnaires. All but three of the thirty-five students performed a second time in performance class as initially planned. In order to include these three students in the study, we used their jury performances as their post-treatment performance. While the use of the jury in lieu of the performance class was less than ideal, it was the only feasible way to retain these three students in the study. Eliminating these three students from the study would have unbalanced the two groups; Treatment Group I would have ended up with 15 subjects, and Treatment Group II with 17 subjects. Though 56 students completed one questionnaire, only 35 could be included in the study who had completed pretest and posttest questionnaires and received one of the two treatments.

Statistical Procedures

The raw scores from the questionnaires were transferred to spread sheets by the researcher (Appendix CC) and checked for errors by proofreader Shirley Simon. Several notational errors were found and corrected. All of the adjustments listed above were likewise transferred to spreadsheets (Appendix DD) and checked for errors by

proofreader Sue Currie. Again several notational and computational errors were found and corrected.

Using Microsoft Excel spreadsheets and software, four correlated samples t-tests (APPENDICES KK-NN) compared the actual differences observed between the pretest and posttest of each of two treatment groups (practice performance & seminar) and for each of two dependent variables (anxiety & quality), with the estimate of difference that would be expected by chance alone, that is the standard error of the difference. Two t-tests for independent samples (APPENDICES II-JJ) compared the actual posttest differences observed between two treatment groups (practice performance & seminar) for each of two dependent variables (anxiety & quality), with the estimate of difference that would be expected by chance alone, that is the standard error of the difference.