

# Group Anxiety Reduction with Sixth Grade Students

by

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## Abstract

Given the high incidence of test-anxiety impairment and the need to treat more students, the study was undertaken to assess a group-administered intervention requiring a minimum of staff hours. An "active control" training was used which has been shown to provide strong anxiety reduction and respectable test score gains in prior studies. The training involves active physical participation to control anxiety, and includes adaptive associations to learning, review, and testing scenes. An entire sixth grade was screened, and 71 students identified as test-anxious were randomly assigned to a Treatment or to a non-participant Control group. The training was presented in three separate sessions to each of two same-sex groups, once live and twice via a 31 minute recording. Students were also given the recorded training to review at least once at home. The Treatment was found to lower test anxiety, producing a 1.1 SD effect size ( $p < .01$ ). Test gains were calculated from the 2007 statewide tests (TCAPs) given a week after the intervention, compared to the prior 2006 TCAPs. The Treatment students attained 4.1 percentile test gains against the Controls. The importance of closer counselor involvement to win student cooperation and of longer acclimation spans after the interventions were considered in accounting for the more modest test gains compared to earlier studies. It is noted that the program attained strong anxiety benefits and modest test performance gains with under an hour of staff time per participating student.

## Introduction

High test anxiety affects at least 16—20% of students, and the number of students with high test anxiety appears to be increasing with the increased emphasis on high-stakes testing (McDonald, 2001). Highly anxious students score about 12 percentile points

below their low-anxiety counterparts (Cassady & Johnson, 2002), and the anxiety itself is considered a principal contributing factor.

While high test anxiety has been recognized as a serious and pervasive problem for the last half century (Sarason, 1984), adequate treatment has been hindered by the extensiveness of the problem, the lengthiness of standard interventions, and inconsistent findings about whether interventions can reliably improve academic performance. The current investigation uses a group-administered version of the "active control" program, which has produced substantial anxiety reduction and also solid test gains among college freshmen and sixth grade students (Driscoll, Holt, & Hunter, 2005; and Miller et al., 2006).

### "Active Control" Anxiety-Reduction Protocol

The protocol begins with eight minutes of sequences in which subjects stretch and tense muscles, take a deep breath and hold it, then release and relax their muscles and follow calming suggestions. The active physical involvement counters the physiological components of arousal, and tensed muscles fatigue quickly so that relaxation follows easily as students release their breath and release their muscles.

Students are asked to identify and then to imagine an activity that they find especially interesting, and are instructed to re-experience the sense of interest in it. Interest in school subjects contributes to academic performance, and an interested attitude can be considered a plausible counter to a fearful attitude.

The students are instructed to imagine themselves in each of eight learning, review, and test-taking scenarios, in which they are interested in the activities. Students are asked to imagine being in class and to imagine being actually interested in what the teacher is explaining. Another scene has students imagine reviewing the material, feeling pleased by what they already know, and recognizing that they are free to organize the material however they feel will be most helpful. Another scene introduces a test-taking skill—imagining not knowing an item on a test, realizing that you do not need to know every item, moving on to another item that you do know, and finding it interesting.

After each of the scenes, the students complete an additional tense-relax sequence to curb any surges of anxiety triggered by the scene, to reinstate the calmness, and to prepare for the next scene. The experience of release and safety at the immediate conclusion of a stressful scene is thought to expedite the anxiety-reduction conditioning. Each of the scenarios and its subsequent tense-release sequence takes about two and a half minutes, and these comprise the majority of the protocol.

Recorded versions of the present protocol have produced consistent anxiety-reduction benefits across multiple samples that are comparable or somewhat stronger than professionally-administered protocols. See Driscoll (2006) for rationale, procedure, and anxiety-reduction findings.

The protocol is now referred to simply as "active control" in that active physical participation and active adaptive attitudes are used to control the anxiety (in contrast to the primary focus on relaxation found in the traditional systematic desensitization).

## Method

### Measures

The Westside Test Anxiety Scale was used to measure anxiety. The scale is designed for use in classrooms to screen for anxiety impairments in as time-efficient a manner as possible. The ten-item instrument has six items assessing performance impairment, and four cognitive items assessing worry and fears of failure, which interfere with concentration. The scale has been found to be a sensitive measure of impairment, with an attained  $r=.44$  correlation between changes in anxiety as measured by the scale and changes in test scores over time (Driscoll, 2007). The scale takes about ten minutes to administer and is public access, involving no cost to the schools.

The Tennessee Comprehensive Assessment Program (TCAP) scores were used as the measure of student test achievement. The TCAP is a statewide test covering reading and language, math, science, and social studies, with the reading and math portions weighted more heavily. The test is ordinarily taken in two-hour sessions over four or more days. The total internal reliability alpha for prior versions has been .95–.96, with adequate evidence of content validity but poor evidence of construct validity (Cizek, 2005). Aggregate scores are used here for the analysis.

The outcome chance score was the Post-intervention TCAP scores, taken in the spring of 2007 after the intervention, minus the Pre- scores taken prior to the intervention in the Spring of 2006.

### Subjects

The study was conducted at a rural East Tennessee intermediate school serving a low-income population. The approximately 220 students from all seven sixth-grade classrooms were screened using the Westside Scale, and 79 students (36%) were found to have a high or moderately-high test anxiety and were included in the study.

Students were then assigned to the Intervention and Control groups, blocked to insure that each group had approximately the same number of students from each teacher and the same proportion of boys and girls. Two of the students assigned to the Treatment group were omitted due to disruptive conduct, three declined to participate, two were omitted because of absences, and one was omitted because of illness, resulting in a total of 71 students, with 33 students completing the Treatment and 38 in the Control group. Girls outnumbered boys in the sample by almost two to one. TCAP scores were

unavailable for 10 of these students, resulting in test scores for 61 students evenly divided between Treatment and Control conditions.

### Procedure

Three Intervention trainings were provided over a two week span, with the boys and the girls grouped separately. The instructors met initially with each group, explained the steps, asked students to try them, answered questions, and then presented the training "live" to the students. In the second and third sessions the training was presented via a CD recording.

In the initial session the speaker was on a raised platform and about five yards from students, who were in auditorium seats. Compliance was assessed by whether students participated in the stretch-tense segments, and whether they closed their eyes to imagine the scenes. Compliance with the initial instructions was mediocre among the girls and poor among the group of boys. On the second and third sessions, students were seated in separate chairs with more personal space, and the two or three staff members intermingled with the students, providing a close supervisory presence and occasionally coaxing individuals to participate in the stretches and to close their eyes to visualize the scenes. Compliance was considerably better in these later two sessions but not uniformly good among all students. As in previous samples, students reported feeling considerably calmer and more relaxed after the trainings.

Shortly after the third session most of the students were given a training CD and asked to review it at home. Nineteen students reported that they reviewed the CD before the testing and 6 reported not reviewing it.

The non-participant Control students were not involved in any intervention and were not told anything about the study or that a study was being conducted. The school staff did not explain the test-anxiety program to the classroom teachers, who were not involved with the program and did not ask questions about it.

Students began the statewide comprehensive TCAP exams a week and a half after the final group training sessions. Treatment and Control students were given the Anxiety scale a second time in the week after the TCAP exams.

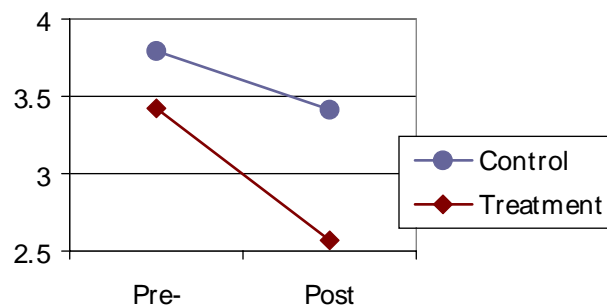
In all, the school staff spent about 4 hours screening students and tallying the results, and about 8 staff hours with the boys and 8 with the in girls in presenting the three trainings. Thus, about 20 staff hours were involved in providing the trainings for the 30 students who completed the training.

## Results

### Anxiety Reduction

Mean Pre- test anxiety scores were somewhat higher for the Control group. Post- scores showed a .85 and a .38 anxiety drop for the Treatment and Control groups respectively, resulting in a .47 benefit for the Treatment group over the Controls (see Figure 1). The attained Treatment reduction benefit was statistically significant ( $t = 2.47$ ,  $df = 69$ ,  $p < .01$ ), and the Treatment effect size was 1.1 SD.

Figure 1: Anxiety Reduction for Treated and Control Students

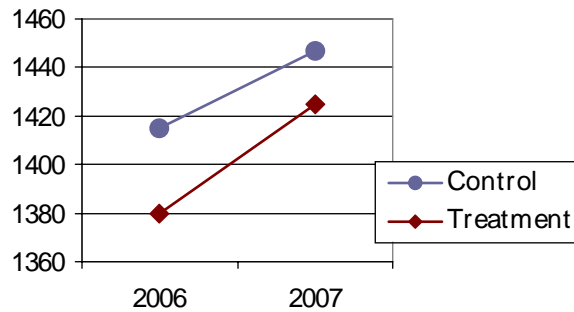


Pre- to Post- anxiety scores correlated  $r = .52$ , indicating moderate stability in these scores. Pre- scores correlated  $r = -.06$  to change scores, and correlated  $r = .06$  to change scores adjusted for Intervention effects, indicating a negligible relation between initial scores and changes in anxiety.

### Test Gains

The TCAP scores, seen in Figure 2, show a clear gain for both groups over the previous school year. The Treatment group gained 45 points, while the Controls gained 32. points, resulting in a 12.4 point gain for the Treatment group compared to the Controls, which was short of statistical significance ( $p < .18$ ). The effect size = .17 SD, which converts to a 4.1 percentile benefit for the Treatment group.

Figure 2: TCAP gains for Treatment and Control Students



### Discussion

The Controls were substantially higher on initial anxiety than the Treatment group, which is not ideal and could have been controlled by blocking. Yet the near-zero correlations between initial anxiety and anxiety changes suggests that the initial anxiety differences had little or no effect on the anxiety benefit results. Thus, the attained 1.1 SD benefit for the Treatment students compared to Controls should be taken as a valid indicator of an anxiety-reduction effect.

The substantial anxiety drop for the Controls Pre- to Post- scores may be a reaction to the high-pressure testing schedule. Schools spend several months of intense preparation prior to TCAPs, and anxiety runs high. The Pre- scores were obtained at the beginning of preparation, when anxiety would be high, while the Post- scores were attained soon after the testing was completed, and the lower scores could reflect the sense of relief from the pressures.

The attained .47 point benefit on the Westside Scale for the Treatment group over the Controls is slightly stronger than earlier .33 point benefit attained in the earlier fifth grade sample.

The 4.1 percentile TCAP benefits attained here are noticeably smaller than the 7.1 percentile gains attained in the earlier fifth grade sample. The fifth grade students were given five trainings over a span of about 16 weeks prior to the TCAPs, allowing the students to acclimate to their lower anxiety levels, gain confidence, and to learn more of the material without interfering anxieties. The current sixth grade students were given three trainings within a three week span before the tests, and so had fewer training sessions and less time to acclimate and gain confidence as they reviewed the material.

The school counselor in the fifth grade study had good rapport with many of her students, began the trainings in small groups of two or three students, and so easily overcame any compliance problems. In contrast, the current sixth grade students were

seen in two large groups, in which rapport could not be established with all students and failures to comply were an ongoing concern.

The advantage of the larger group trainings is the low number of staff hours required to produce the benefits. The solid anxiety-reduction benefits and the 4 percentile TCAP gains were attained here with an investment of under a single staff hour per student.

### Conclusions

While the current group administration did attain substantial anxiety reduction benefits, the compliance concerns and the smaller test gains attained here suggest that a longer span of training sessions and a better established relationship can facilitate stronger test gains in programs using the active control training. We recommend that anxiety reduction begin perhaps 8 or 10 weeks before major testing, and that initial administrations with grade school students begin in more manageable groups of just 4 to 6 students.

Nonetheless, if the attained 4 percentile test gains hold up in further research, the use of less than a single staff hour per student might be considered an excellent allocation of school resources to reduce anxiety impairment and improve test performance.

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