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The importance of an educational phase to the stress inoculation of anxiety

Susan Elizabeth Naggs

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THE IMPORTANCE OF AN EDUCATIONAL PHASE TO THE
STRESS INOCULATION OF ANXIETY

BY

SUSAN ELIZABETH NAGGS

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The Importance of an Educational Phase to the
Stress Inoculation of Anxiety

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Abstract

The purpose of this study was to examine the importance of an educational component to the stress inoculation training (SIT) package, as well as the generalization of such training to non-targeted stressors. Twenty-eight students from introductory speech classes at the University of Richmond were matched in sets of four and placed into one of the following groups: Ed only, Skills only, Combo, and No treatment Control. Pre and post measures of anxiety were obtained through the administration of the STAI, SE, TAS, and AAT scales. The three treatment groups attended a speech anxiety workshop where various components of the SIT package were presented. It was hypothesized that a treatment group receiving only the educational rationale of SIT would show as much fear reduction as a treatment group receiving only the skills of SIT without an educational component. A group receiving both education and skills training would improve as well as the other groups. In general, the results showed that the Ed only group was as effective as the Skills only group in reducing state anxiety and increasing self-efficacy. In terms of generalization effect, the results do not provide much support. Overall, the results support the notion that education is an important ingredient in SIT. The question of generalization is still unanswered and requires further research.

The Importance of an Educational Phase to the Stress Inoculation of Anxiety

Cognitive-behavioral approaches have recently been recognized and developed in clinical psychology (Mahoney, 1977; Meichenbaum, 1977). One of the behavioral approaches developed by researchers in this area is stress inoculation training (Meichenbaum, 1977). Stress inoculation training (SIT) is a procedure whereby an individual learns to deal with stress by learning skills to manage future stressful situations. This technique has been found to be effective in the treatment of test anxiety (Goldfried, Linehan, and Smith, 1968; Hussian and Lawrence, 1978), speech anxiety (Fremouw and Zitter, 1978; Jaremko and Walker, Note 1), anger (Novaco, 1976), and laboratory-induced pain (Horan, Hackett, Buchanon, Stone, and Demchik-Stone, 1977). Not only has the treatment been effective for a variety of anxious situations, but also with diverse populations such as college students (Meichenbaum, 1977), law enforcement officers (Meichenbaum and Novaco, 1978), and burn patients (Jaremko, Taylor, and Wernick, Note 2).

However, research in the area of SIT has been marked by procedural variation since different studies have used different procedures (Jaremko, 1979). The treatment package itself contains several components. Jaremko (1979), in an attempt to classify these components, analyzed stress inoculation in three phases: education, rehearsal, and application. The educational phase involves presenting a model to the client of the stress

reaction that is intuitively plausible. In the rehearsal phase, the client is taught coping skills. A number of techniques have been employed which include relaxation (Novaco, 1976; Hussian and Lawrence, 1978), cognitive restructuring (Fremouw and Zitter, 1978), cognitive coping strategies (Goldfried, et al., 1978; D'Zurilla, Wilson, and Nelson, 1973), and stress reappraisal (Meichenbaum and Cameron, Note 3; Novaco, 1976; Turk, Note 4). In the final phase, application, the techniques are practiced while the client is being exposed to the stressor in vivo or imaginally.

In order to maximize the effectiveness of SIT, the contribution of each of these components must be determined. This has been recognized by some researchers who have attempted to study the effects of the various components. Horan, et al. (1977) conducted an experiment to study the effects of pain control by SIT. They concluded that cognitive restructuring was the major component, while education was regarded as a necessary but not sufficient component. It should be noted, however, that this study suffered methodological problems. In another study, Fremouw and Zitter (1978) found that cognitive restructuring was more effective than skills training in reducing speech anxiety. Goldfried, Linehan, and Smith (1978) reported that cognitive restructuring was more effective than exposure in the treatment of test anxiety.

In previous component analysis studies, cognitive restructuring has been regarded as the most important component of SIT and has, therefore, received the most attention in the research field. However, contrary to the Horan, et al. (1977) study, it is

possible that the educational phase may be of some significance. Jaremko (1979) argued that Horan, et al. (1977) did not provide an adequate test of the contribution of the educational phase to the efficacy of SIT. Data from other sources also appear to provide evidence on the importance of an educational phase in the treatment of anxiety.

Oliveau, Agras, Leitenberg, Moore, and Wright (1969) conducted an experiment to study the separate and combined influences of therapeutic instructions and positive reinforcement. Subjects with a fear of snakes were assigned to one of four groups receiving instructions with reinforcement, instructions only, reinforcement only, and no instructions, no reinforcement. They found that therapeutic instructions alone influence approach behavior, therefore indicating that therapeutic instructions enhances therapeutic effects. Hicks and Shenberg (1976) conducted a similar experiment using snake phobic subjects. The researchers studied the effects of rationale and incentive separately and in combination in regard to approach behavior. They found that both rationale and incentive alone were effective in increasing approach behavior, however, the best results occurred when the two were combined. A therapeutic rationale was again shown to be effective in therapeutic treatment.

The effects of education in anxiety management has also been studied with regard to the types of information given. Parrino (1971) treated snake phobic subjects using two different types of pretherapy information, descriptive and theoretical. Each subject was randomly placed into one of the following groups: Learning theory (advance-organizer group), expected behaviors (expectation

group), learning theory and expected behavior (advance-organizer-expectation group), no information (NI), and irrelevant information (NOA). Pretherapy information was found to increase approach behavior when the information given was relevant.

The previous research indicates, therefore, that an educational phase of therapy is an important component in therapeutic treatment. Although research has been directed towards the effect of pretherapy information on the outcome of operant conditioning, systematic desensitization, and general psychotherapy, the role of education in SIT has been studied very little. Two important experiments have been conducted, however, on the contribution of an educational phase to stress inoculation.

Girodo and Wood (1978) showed that providing an educational rationale makes the skills of SIT effective. According to their results, the skills are ineffective without the rationale. Using the cold pressor stimulus, Girodo and Wood trained subjects to emit coping self-statements while the hand was immersed in the cold water. Half of these subjects were given an educational rationale for why and how self-statements can control pain tolerance. Results showed that the education group increased tolerance but the self-statements only group did not.

Hadfield (Note 5) conducted a study with speech anxious students in which the SIT educational rationale of Jaremko (1979) was given alone (Ed only), in combination with the skills (Combo), not given but skills were given (Skills only), and not given with skills not given (No Treatment). Hadfield found that the Ed only and the Combo groups were more improved than were the Skills only or the No Treat-

ment group. These results, however, were not statistically robust, and may have been effected by the fact that there were only six subjects in the Ed only group. In addition, Hadfield (Note 5) used only two sessions of SIT and speculated that the educational rationale may be a more important ingredient in SIT when there are a small number of sessions. He hypothesized that as the number of sessions increased the contribution of the skills training may increase.

The present study was a replication and extension of Hadfield's work. Given the impact of Hadfield's finding that SIT works due to education only, a replication was needed. This study was designed to do that as well as to investigate the generalization effects of SIT.

The educational component under investigation in this study was based on a modified Schachterian model of emotional arousal (Jaremko, 1979). Stress is regarded as a cycle of physical arousal (e.g. increased heart rate, sweaty palms, rapid breathing), automatic appraisal of the situation as anxiety, and negative self-statements. Each component leads to the next in a self-perpetuating, continuous cycle. This model was selected for its plausibility and possible use of specific coping techniques (Jaremko, 1979). According to Meichenbaum (1977) the educational model is designed to aid the client in his understanding of the nature of his response to stressors and to facilitate the client's participation. Therefore, the plausibility of the model was more important than its scientific validity.

The contribution of the educational component to stress inoculation was studied using speech anxiety. Jaremko and Walker (Note

1) and Hadfield (Note 5) employed similar research designs and treatment procedures in their studies of the contribution of different aspects of the SIT package. Similar procedures were used in this study. These involved presenting stress inoculation in a speech anxiety workshop for students from introductory speech classes who were selected and evaluated for treatment through in-class measurements of anxiety.

There are several advantages with this type of format (Jaremko and Walker, Note 1; Hadfield, Note 5). First, the nature of speech anxiety for those students currently enrolled in speech classes can be regarded as more clinical than many fear analogues. Treatment was available to those students who were in need. Secondly, the external validity of the test was increased due to the measurement of fear in an actual fear situation. Lastly, the workshop format allowed for a time efficient treatment package. The stress inoculation package could be presented to groups of students in two sessions, with minimal time expenditure for the therapist.

The present study hypothesized that a treatment group receiving only the educational rationale of SIT would show as much fear reduction as a treatment group receiving only the skills of SIT without an educational component. A group receiving both education and skills training would improve as well as the other groups.

This study differed from Hadfield (Note 5) in a number of ways. First, the State-Trait Anxiety Inventory (STAI) (Spielberger, Gorsuch, and Lushene, 1970) was used as a measure of anxiety rather than the Multiple Affect Adjective Checklist (MAACL) (Zuckerman and Lubin, 1964). This was done since the STAI has been used in

anxiety treatment studies as much if not more than the MAACL. Switching instruments provided cross-methods validity. Secondly, the behavioral measure of rating the presence and extent of behavioral aspects of anxiety was deleted. This was done because both Jaremko and Walker (Note 1) and Hadfield (Note 5) found that all subjects, whether treated or not, improved on this measure. It, therefore, did not discriminate treatment effects. Third, the present study tested the generalization of SIT by using some non-targeted anxiety measures. Specifically, the study assessed the generalization effect of SIT to the improvement of test anxiety (Sarason, 1977) and debilitating and facilitating academically-related anxiety (Alpert and Haber, 1960).

The generalization effects of SIT have not been overwhelmingly supported (Jaremko, 1979). Originally SIT was designed as a way to teach people to cope with stress in general (Meichenbaum and Cameron, Note 3). Only one study, however, has found an improvement effect for non-targeted stressors. Deffenbacher, Mathis, and Michaels (in press) conducted a study with introductory psychology students and found significantly less anxiety on the non-targeted stressors. The present study provided a further test of this proposed generalization by including the test anxiety scale and the facilitating/debilitating anxiety measure.

Method

Subjects.

All subjects were selected from a pool of 80 introductory speech students at the University of Richmond. A public speaking

fear survey (SFSS) (Jaremko and Wenrich, 1973) (Appendix A) was administered to all students at the beginning of the semester. The survey has been used in several studies and has been shown to discriminate anxious from non-anxious people (Jaremko and Walker, Note 1; Jaremko and Wenrich, 1973; Hadfield, Note 5). Students were matched in sets of four and asked to participate in a speech anxiety workshop dealing with the stress of public speaking. Subjects who agreed to participate were assigned to one of the following groups: stress inoculation with education only (Ed only) (n=5), stress inoculation without education (Skills only) (n=7), combination group (Combo) (n=8), and a no treatment control group (n=8). The means and standard deviations of each group on the SFSS were: Ed only--47.4/16.01; Skills only--51.0/10.49; Combo--51.8/10.33; No Treatment--51.5/9.34. A one-way analysis of variance showed no significant differences between groups.

Treatments.

The State-Trait Anxiety Inventory A-state scale was used as a measure of anxiety. The A-state scale (Appendix B) has been shown to be effective in discriminating speech anxiety (Lamb, 1973). A self-efficacy measure (SE) (Appendix C) of public speaking was also used. This measure was employed in a study on public speaking anxiety (Jaremko and Walker, Note 1). It was based on other self-efficacy measures (e.g. Bandura, 1977). The instrument contains ten specific behaviors involved in preparing and delivering a speech (e.g. selecting a topic, practicing with a friend, delivering a speech for a grade, receiving feedback about their speech).

Subjects were asked to rate their abilities to perform the behaviors on a ten point scale from "great uncertainty" to "complete certainty." The validity of this measure is suggested by its correlation with other measures in previous work (Jaremko and Walker, Note 1; Hadfield, Note 5). The correlation with the MAACL was .64 and the correlation with the Behavioral Assessment of Speech Anxiety (Mulac and Sherman, 1974) was .71.

Generalization was assessed by using the 37-item Test Anxiety Scale (TAS) (Mandler and Sarason, 1952) (Appendix D) and the Achievement Anxiety Test (AAT) (Alpert and Haber, 1960) (Appendix E) which measures debilitating and facilitating anxiety. Both of these measures are frequently used in anxiety treatment studies.

Procedure.

The professors of the speech classes were contacted at the beginning of the term. The rationale and procedure of the study was explained and their cooperation was elicited. The researcher attended the classes to explain the study to the students. An informed consent agreement (Appendix F), the SFSS, the TAS, and the AAT were administered to the students at that meeting.

Subjects were recruited and assigned to one of four treatment groups. The author observed the subjects during their first and third in-class speeches of the semester. The subjects were asked to fill out the STAI and SE measures before these two speeches as a pretest and post test measure. Stress inoculation was administered between these two speeches. A final questionnaire was given to each subject following the third speech to assess the subject's

perception of the effect of the speech workshop (Appendix G). The TAS and AAT were given after the third speech as well. All subjects were informed that the results of the study would be available at the end of the term for those who were interested.

Design.

This study was a four X two (groups X trials) analysis of variance with repeated measures on one factor. The (A) factor was composed of the three treatment conditions and the control group. The pretest/ post test was the (B) factor. One-way ANOVAS were used to specify effects in case significant interactions were obtained. The acceptable level of significance used in this study was $\alpha = .05$.

Treatments.

The subjects met for two sessions following their first in-class speech. The workshops met for one hour each session, at which time the stress inoculation procedure was administered.

Stress Inoculation with Education Only. This treatment was identical to the procedure used by Hadfield (Note5). A modified Schachterian model of stress was presented to the subjects. According to this model, stress is a cycle of physical arousal, automatic appraisal of anxiety, and negative self-statements. Three sets of skills were introduced which could be used to break the cycle: physical relaxation, coping statements which reappraise the stress in a series of four stages: preparation, confrontation, coping, and self-reinforcement, and identification of negative self-state-

ments and their replacement with positive self-statements. These skills were merely presented and exemplified with no practice of the specific skills. The education phase was delivered in a lecture/discussion format.

A review of this model and a general filler discussion of the nature of stage fright was presented in session two. The discussion of stage fright was borrowed from the student's speech class textbook. Five main ideas were discussed: speech anxiety as a misnomer, stage fright as a normal form of emotional tension, helpful aspects of stage fright, how it can be harmful, and how it can be controlled. Appendix H is the treatment manual for this group.

Stress Inoculation Without Education. This group also received the same treatment procedure as was used by Hadfield (Note 5). Three sets of skills were presented to the subjects which could be used to break the cycle of anxiety. First, two physical coping skills were presented: identification of where each person felt the arousal (e.g. tension in the neck, palmar sweating, etc.) and a specific technique to combat the arousal (e.g. countertension, self-massage, etc.), and deep, slow breathing to be used in the application phase. Next, examples of coping statements designed to change the appraisal of stress (Meichenbaum and Cameron, Note 3) were given to the subjects. Finally, the subjects were asked to write negative self-statements made during preparation and delivery of a speech (e.g. "The audience will think I'm stupid," "I'll forget what I'm supposed to say"). Positive self-statements were then generated by the group (e.g. "This will be one less speech I have

to give," "At least I learned something from this speech"). The subjects were instructed to select two positive self-statements which they felt applied to them and then write them down.

The skills were reviewed in the second session. Subjects were asked to share two of their negative self-statements with the group and chose two positive self-statements to serve as replacements. Each person was then asked to give a short speech on a topic which was assigned to them. This constituted the application phase. Each subject was instructed to state out loud where they felt their arousal, to reduce this arousal, verbalize their negative self-statements, and breathe deeply as they walked to the head of the table. Upon completion of their speech, they were instructed to reward themselves for having coped. Appendix I is the treatment manual for this group.

Combination Group. This treatment was also identical to the procedure used by Hadfield (Note 5). The procedure consisted of three phases: education, rehearsal, and application. The educational phase included a presentation of the stress model, as was given in the Ed only group, and a discussion of the skills which could be used to break the cycle of anxiety. The remainder of the session was identical to the treatment used in the Skills only group.

Session two included a review of the stress model and the skills taught in session one. The application phase consisted of a short speech given by each student. The procedure was the same as that used in the Skills only group. Appendix J is the treatment manual

for this group.

No Treatment Control. This group received the same assessment procedure as the three treatment groups but received no treatment. They were told that they could seek treatment for their speech anxiety at the counseling center. Assistance was available following the final assessment. No one participated in such treatment.

Results

Table 1 presents the means and standard deviations of each group on all four measures. One-way analyses of variance on the pretest of the STAI and SE measures revealed no significant differences between the four groups. The two-way analysis of variance revealed no significant effects on the STAI measure. A significant trials effect was obtained on the SE measure [$F(1, 24) = 19.25$; $p < .001$]. No significant results were found on the TAS. A significant trials effect was found on the Debilitating anxiety scale of the AAT [$F(1, 24) = 5.65$; $p < .05$]. The tables for these analyses are contained in Appendix K.

These results are somewhat confusing, since inspection of the means suggest different results. For example, on the STAI, the No Treatment control group actually showed an increase from the pre to post test. One would have expected that this would have resulted in a significant interaction in this analysis. Apparently, the small n's and large variances resulted in reduced power of the

Table 1
Means and Standard Deviations of Scores
on Pre and Post Measures of Anxiety

Treatment	STAI*		SE**		TAS*		AAT-D*		AAT-F*	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
ED ONLY										
Pre	52.2	6.1	64.6	5.59	17.8	7.79	34.0	3.46	22.6	2.6
Post	47.8	19.0	74.6	15.27	18.6	8.29	31.6	6.18	23.2	2.77
SKILLS ONLY										
Pre	55.4	10.3	60.1	10.85	16.71	5.40	32.86	3.24	24.14	3.38
Post	45.7	10.1	73.1	10.58	15.85	6.14	31.29	2.28	25.71	4.38
COMBO										
Pre	53.1	10.5	59.25	11.17	17.10	4.38	33.13	2.10	27.13	2.10
Post	48.1	9.78	63.37	10.92	17.25	4.39	30.25	4.20	26.0	3.29
NO TREATMENT										
Pre	52.4	14.05	56.50	15.09	18.75	8.37	31.25	1.76	25.88	2.16
Post	57.25	9.2	60.37	11.17	20.25	9.03	31.25	2.49	25.88	1.64

* Higher numbers indicate more anxiety.

** Higher numbers indicate more self-efficacy.

Table 2

Means of Subject's Ratings on the Workshop Effectiveness Questionnaire

Assessment	ED ONLY*	SKILLS ONLY*	COMBO*
	\bar{X}	\bar{X}	\bar{X}
Effect	1.4	2.28	2.0
Lowered Anxiety	1.0	1.57	1.25
Techniques	1.4	2.71	2.25

* Scores ranging from 0 to 5 indicate positive results (e.g. helpful, lowered anxiety).

statistical analysis. Conclusions about the meaning of the results should, therefore, be guarded.

The means of the workshop effectiveness questionnaire are contained in Table 2. These indicate that the Skills only group found the workshop to be more effective, to produce lower anxiety, and the techniques learned to be more helpful than the Combo group, which was better than the Ed only group. These differences are only casual observations, however, since no statistical analyses were performed on these data.

Discussion

While not unequivocal, the results of this study support the notion that education is an important component of SIT. In general, the results showed that the Ed only group was as effective as the Skills only group in reducing state anxiety and increasing self-efficacy. However, these results should be interpreted with caution due to the fact that the statistical analyses did not absolutely support the equivalence of the Ed only and Skills only groups. It appears from these results that all groups resulted in state anxiety reduction and self-efficacy increase. However, it is difficult to justify that the No Treatment control group resulted in a reduction of state anxiety when in fact these subjects increased an average of almost five points on the STAI. Likewise, on the SE measure, both the Ed only and Skills only groups resulted in almost double the amount of increase than was evident in the Combo and No Treatment control groups. It can, therefore, be stated (although con-

servatively) that the Ed only group was as effective as the Skills only group.

The Combo group did not seem to show as much increase in self-efficacy as the other treatment groups. It may have been that there was too much information given in these sessions. Lack of results may have been caused by an overload of information.

The results do not provide much support in terms of the generalization of SIT to non-targeted stressors. No significant results were obtained on the TAS measure or the facilitating anxiety scale of the AAT. However, the debilitating anxiety scale of the AAT did produce a significant degree of change across trials. This would suggest that all groups reduced in debilitating anxiety. However, closer inspection of Table 1 reveals that the Ed only and Combo groups changed more than the other groups. While this result has not been subject to statistical verification, it does provide suggestions for further work. It is possible that SIT which has the educational model proposed by Jaremko (1979) produces more generalization than does skills learning (or no treatment). Conceptually, this result is defensible since it would seem that the educational model can be applied more easily to other stressors, as opposed to skills which have been specifically applied to the targeted stressor. Further research, would of course, be needed to support this speculation. The question of generalization is still unanswered and requires further research.

Overall, the results of the present study seem to provide a positive replication of Hadfield (Note 5). Education does seem to be an important component in SIT. The fact that two studies achiev-

ed similar results lends cumulative validity to the hypothesis. Further research can now be focused on Hadfield's speculation that the number of sessions has an effect on the extent of the educational component's contribution to the SIT package. In addition, it is important to investigate the differential effectiveness of various educational rationale. Analysis of the components in SIT in such a manner may produce a more effective and efficient clinical tool.

APPENDIX A

Directions: Answer these questions on a scale of 0 to 7. A score of 0 indicates that this statement is completely false concerning your life. A score of 7 indicates that the statement is completely true concerning you and your life. You may answer the question anywhere from 0 to 7, depending on how true it is concerning your life. Remember, 0 is completely false, 7 is completely true. Now answer these questions:

- | | F | T |
|--|-----------------|---|
| 1. I try to avoid occasions in which I have to speak to a group. | 0 1 2 3 4 5 6 7 | |
| 2. I am easily downed in an argument. | 0 1 2 3 4 5 6 7 | |
| 3. I enjoy speaking to a group of people. | 0 1 2 3 4 5 6 7 | |
| 4. When I am speaking to a group, I am fairly relaxed. | 0 1 2 3 4 5 6 7 | |
| 5. I would feel more self-confident if I could speak in public. | 0 1 2 3 4 5 6 7 | |
| 6. I frequently have to fight against showing that I am nervous when I am speaking to a group of people. | 0 1 2 3 4 5 6 7 | |
| 7. I find it hard to talk when I meet new people. | 0 1 2 3 4 5 6 7 | |
| 8. I would like to be a good speaker. | 0 1 2 3 4 5 6 7 | |
| 9. I feel anxiety about something all the time when I am speaking to a group. | 0 1 2 3 4 5 6 7 | |
| 10. I am not usually self-conscious when I speak to a group. | 0 1 2 3 4 5 6 7 | |
| 11. I love to go to meetings in which I have to give a speech. | 0 1 2 3 4 5 6 7 | |
| 12. I believe people would like me more if I could speak in public. | 0 1 2 3 4 5 6 7 | |
| 13. When in busses, trains, etc. I often speak to strangers. | 0 1 2 3 4 5 6 7 | |
| 14. I wish taht I would never have to speak to a group. | 0 1 2 3 4 5 6 7 | |

APPENDIX B

Directions: A number of statements which people have used to describe themselves are given below. Read each statement and then blacken in the appropriate circle to the right of the statement to indicate how you feel right now, that is, at this moment. There are no right or wrong answers. Do not spend too much time on any one statement but give the answer which seems to describe your present feelings best.

	Not at all	Somewhat	Moderately so	Very much so
1. I feel calm.	1	2	3	4
2. I feel secure.	1	2	3	4
3. I am tense	1	2	3	4
4. I am regretful	1	2	3	4
5. I feel at ease	1	2	3	4
6. I feel upset	1	2	3	4
7. I am presently worrying over possible misfortunes.	1	2	3	4
8. I feel rested.	1	2	3	4
9. I feel anxious	1	2	3	4
10. I feel comfortable	1	2	3	4
11. I feel self-confident.	1	2	3	4
12. I feel nervous	1	2	3	4
13. I am jittery	1	2	3	4
14. I feel "high strung"	1	2	3	4
15. I am relaxed	1	2	3	4
16. I feel content	1	2	3	4
17. I am worried	1	2	3	4
18. I feel over-excited and "rattled".	1	2	3	4
19. I feel joyful.	1	2	3	4
20. I feel pleasant.	1	2	3	4

APPENDIX C

Speech Skills Survey

Please rate the extent to which you feel able to do the things required of each of the following aspects of public speaking.

1. Choosing an appropriate topic.

1	2	3	4	5	6	7	8	9	10
Great Uncertainty				Moderately Uncertain			Completely Certain		
2. Finding relevant information for the topic and/or supporting arguments for the topic.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----
3. Practicing the speech alone.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----
4. Practicing the speech with a friend.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----
5. Reading a speech from a manuscript.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----
6. Delivering the speech from notes (extemporaneously).

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----
7. Delivering an impromptu speech.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----
8. Delivering a speech which is not for a grade.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----
9. Delivering a speech for a grade.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----
10. Receiving criticism from the class and discussing your weaknesses in speaking with someone else.

1	2	3	4	5	6	7	8	9	10
---	---	---	---	---	---	---	---	---	----

APPENDIX D

- T F 1. While taking an important exam I find myself thinking of how much brighter the other students are than I am.
- T F 2. If I were to take an intelligence test, I would worry a great deal before taking it.
- T F 3. If I knew I was going to take an intelligence test, I would feel confident and relaxed, beforehand.
- T F 4. While taking an important examination I perspire a great deal.
- T F 5. During course examinations I find myself thinking of things unrelated to the actual course material.
- T F 6. I get to feel very panicky when I have to take a surprise exam.
- T F 7. During tests I find myself thinking of the consequences of failing.
- T F 8. After important tests I am frequently so tense that my stomach gets upset.
- T F 9. I freeze up on things like intelligence tests and final exams.
- T F 10. Getting a good grade on one test doesn't seem to increase my confidence on the second.
- T F 11. I sometimes feel my heart beating very fast during important tests.
- T F 12. After taking a test I always feel I could have done better than I actually did.
- T F 13. I usually get depressed after taking a test.
- T F 14. I have an uneasy, upset feeling before taking a final examination.
- T F 15. When taking a test my emotional feelings do not interfere with my performance.
- T F 16. During a course examination I frequently get so nervous that I forget facts I really know.
- T F 17. I seem to defeat myself while working on important tests.
- T F 18. The harder I work at taking a test or studying for one, the more confused I get.
- T F 19. As soon as an exam is over I try to stop worrying about it, but I just can't.

- T F 20. During exams I sometimes wonder if I'll ever get through college.
- T F 21. I would rather write a paper than take an examination for my grade in a course.
- T F 22. I wish examinations did not bother me so much.
- T F 23. I think I could do much better on tests if I could take them alone and not feel pressured by a time limit.
- T F 24. Thinking about the grade I may get in a course interferes with my studying and my performance on tests.
- T F 25. If examinations could be done away with I think I would actually learn more.
- T F 26. On exams I take the attitude, "If I don't know it now there's no point worrying about it."
- T F 27. I really don't see why some people get so upset about tests.
- T F 28. Thoughts of doing poorly interfere with my performance on tests.
- T F 29. I don't study any harder for final exams than for the rest of my course work.
- T F 30. Even when I'm well prepared for a test, I feel very anxious about it.
- T F 31. I don't enjoy eating before an important test.
- T F 32. Before an important examination I find myself trembling.
- T F 33. I seldom feel the need for cramming before an exam.
- T F 34. The University ought to recognize that some students are more nervous than others about tests and that this affects their performance.
- T F 35. It seems to me that examination periods ought not to be made the tense situations which they are.
- T F 36. I start feeling very uneasy just before getting a test paper back.
- T F 37. I dread courses where the professor has the habit of giving "pop" quizzes.

APPENDIX E

Please circle the number closest to the adjective that corresponds to how each statement applies to you.

- | | | | | | |
|---|--------------------|---|---|------------------------------------|--------|
| 1. Nervousness while taking an exam or test hinders me from doing well. | 1 | 2 | 3 | 4 | 5 |
| | Always | | | | Never |
| 2. I work most effectively under pressure, as when the task is very important. | 1 | 2 | 3 | 4 | 5 |
| | Always | | | | Never |
| 3. In a course where I have been doing poorly, my fear of a bad grade cuts down my efficiency. | 1 | 2 | 3 | 4 | 5 |
| | Never | | | | Always |
| 4. I make good grades. | 1 | 2 | 3 | 4 | 5 |
| | Always | | | | Never |
| 5. When I am poorly prepared for an exam or test, I get upset, and do less well than even my restricted knowledge should allow. | 1 | 2 | 3 | 4 | 5 |
| | This never happens | | | This always happens | |
| 6. The more important the examination, the less well I seem to do. | 1 | 2 | 3 | 4 | 5 |
| | Always | | | | Never |
| 7. School is very important to me. | 1 | 2 | 3 | 4 | 5 |
| | True of me | | | Not true of me | |
| 8. The grades I receive reflect my ability. | 1 | 2 | 3 | 4 | 5 |
| | Never | | | | Always |
| 9. While I may (or may not) be nervous before taking an exam, once I start, I seem to forget to be nervous. | 1 | 2 | 3 | 4 | 5 |
| | I always forget | | | I am always nervous during an exam | |
| 10. During exams or tests, I block on questions to which I know the answers, even though I might remember them as soon as the exam is over. | 1 | 2 | 3 | 4 | 5 |
| | Always | | | | Never |
| 11. Nervousness while taking a test helps me do better. | 1 | 2 | 3 | 4 | 5 |
| | Never | | | | Always |
| 12. When I start a test, nothing is able to distract me. | 1 | 2 | 3 | 4 | 5 |
| | Always | | | | Never |
| 13. Tests are good measures of what I know. | 1 | 2 | 3 | 4 | 5 |
| | Always | | | | Never |
| 14. In courses in which the total grade is based mainly on <u>one</u> exam, I seem to do better than other people. | 1 | 2 | 3 | 4 | 5 |
| | Never | | | | Always |

- | | | | | | | |
|-----|---|------------|---|---|----------------|---|
| 15. | I find that my mind goes blank at the beginning of an exam, and it takes me a few minutes before I can function. | 1 | 2 | 3 | 4 | 5 |
| | | Always | | | Never | |
| 16. | I look forward to exams. | 1 | 2 | 3 | 4 | 5 |
| | | Never | | | Always | |
| 17. | I am so tired from worrying about an exam, that I find I almost don't care how well I do by the time I start the test. | 1 | 2 | 3 | 4 | 5 |
| | | Never | | | Always | |
| 18. | Time pressure on an exam causes me to do worse than the rest of the group under similar conditions. | 1 | 2 | 3 | 4 | 5 |
| | | Always | | | Never | |
| 19. | Although "cramming" under pre-examination tension is not effective for most people, I find that if the need arises, I can learn material immediately before an exam, even under considerable pressure, and successfully retain it to use on the exam. | 1 | 2 | 3 | 4 | 5 |
| | | Always | | | Never | |
| 20. | I enjoy studying. | 1 | 2 | 3 | 4 | 5 |
| | | Always | | | Never | |
| 21. | I enjoy taking a difficult exam more than an easy one. | 1 | 2 | 3 | 4 | 5 |
| | | Always | | | Never | |
| 22. | Grading systems are fair. | 1 | 2 | 3 | 4 | 5 |
| | | Never | | | Always | |
| 23. | I find myself reading exam questions without understanding them, and I must go back over them so that they will make sense. | 1 | 2 | 3 | 4 | 5 |
| | | Never | | | Always | |
| 24. | The more important the exam or test, the better I seem to do. | 1 | 2 | 3 | 4 | 5 |
| | | True of me | | | Not true of me | |
| 25. | I think most professors count grades too much. | 1 | 2 | 3 | 4 | 5 |
| | | Always | | | Never | |
| 26. | When I don't do well on a difficult item at the beginning of an exam, it tends to upset me so that I block on even easy questions later on. | 1 | 2 | 3 | 4 | 5 |
| | | Never | | | Always | |

APPENDIX F

Informed Consent Agreement

My participation in this experiment has been explained to me. I am fully aware of the following points and I volunteer to participate.

1. I will be asked to fill out a questionnaire concerning my feelings toward speaking in public. I may chose not to complete the questionnaire or omit any item I desire.
2. My responses will be seen only by Dr. Jarenko, Ms. Naggs, my speech professor. The questionnaire may be returned to me upon request.

Signature

Address

Phone

Date

APPENDIX G

The following questions pertain to your assessment of the workshop and how it has affected your speaking. Please answer the questions as honestly as possible. (Circle one number on each line.)

1. The effect of the workshop on my speaking was

5	4	3	2	1	0	1	2	3	4	5
Detrimental					No effect			Helpful		

2. My anxiety after the workshop compared to previous speeches was

5	4	3	2	1	0	1	2	3	4	5
Much greater			Unchanged				Much lower			

3. I have found the techniques described in the workshop to be

5	4	3	2	1	0	1	2	3	4	5
Detrimental					Irrelevant			Helpful		

APPENDIX H

Treatment Procedure

Session One

I. Introduction and Purpose

The basic format of this treatment is lecture/discussion. As it turns out, the emphasis gets placed on lecture due to the relative unassertiveness of students who are attracted to a speech anxiety workshop. In introducing the workshop, the important point is to make it seem relevant to the participant. In a short set of opening remarks (circa five minutes), the leader states that the participants have indicated anxiety while giving speeches by way of the specific fear survey schedule. The "phenomenology" of this speech anxiety is anticipated by the leader in these opening remarks. In this way the participants come to know that the leader is aware of or in touch with what their problem is. He may ask questions about how a particular student feels physically before speaking. Or he may provide a list of general anxiety symptoms. The point is to establish rapport by a form of "anticipatory empathy."

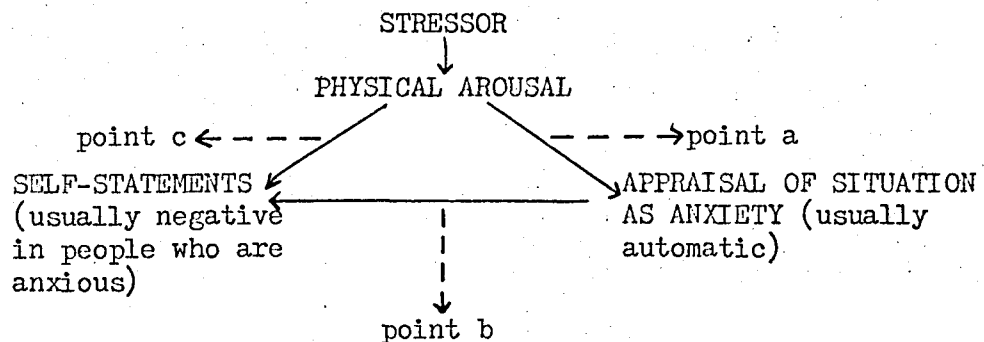
The leader goes on to say that we will view giving a speech as a stressor. It sets off a set of reactions that the student can learn to deal with by the skills he or she will learn tonight. Specifically, two purposes are given for the workshop: (1) to enable students to become effective speakers and (2) to learn how "cognitive" techniques are used in dealing with speech stress. The remainder of the workshop is organized in two of the three phases of stress inoculation proposed by Meichenbaum and his colleagues.

II. Education Phase

A. Model of Emotion

The students are told that the name of this procedure is stress inoculation and that the reason for the name is important. The person is given a set of skills which can be used to cope with stress--any stress but mainly speech anxiety.

By using a blackboard or other visual aid the leader constructs the modified Schachterian model used in this variety of SIT. A stressor, be it speaking, having a date, or taking an exam, leads to a predictable set of reactions that are cyclical in nature. The following diagram is used:



Each phase (physical arousal, appraisal, and self-statements) is discussed Socratically with the participants. The leader asks them for their own instances of each phase. He or she also provides overall examples to show the cyclic nature of this model. Three examples were used: asking someone for a date, taking a final exam, and giving a speech. The leader also anticipates the reflective student by briefly talking about the automatic, involuntary and seemingly nonconscious nature of this cycle. In people who are truly anxious it seems as if the model will not fit be-

cause this model requires explicit "talking to yourself." Some anxious people are just anxious and do not have thoughts like that. The appeal to the automatic nature of some stress reaction seems to satisfy this objection.

This phase of the treatment (which takes 15 to 20 minutes) is closed by stating that the idea of SIT is two fold: (1) to provide a set of coping skills to break up the cycle at points A, B, and C and (2) to think a different set of thoughts so that the automaticity of the cycle is slowed down enough to enable the person to use the coping skills.

Session Two

This session was a review of this model and a general filler discussion of the nature of stage fright. This discussion of stage fright or speech anxiety was borrowed from the student's speech class textbook. Five main ideas were discussed: (1) Speech anxiety is a misnomer. Speech anxiety is viewed as an increase in tension caused by heightened drive or motivation as one approaches the performance situation. (2) Stage fright is not peculiar to certain individuals or groups of people, but is a normal form of emotional tension, occurring in anyone confronted with a situation in which the performance is important and the outcome uncertain. (3) Stage fright causes helpful physiological reactions that can prepare the speaker for more effective mental and physical efforts. (4) Stage fright can be harmful if the speaker fails to understand it properly and control it. (5) Stage fright can be controlled by the speaker by developing a proper attitude toward it, by getting much experience in a broad variety of speaking situations, by preparing

well for any speaker effort by using effective bodily action in presenting the speech, by remembering that listeners generally want to see the speaker succeed.

APPENDIX I

Treatment Procedure

Session One

I. Introduction and Purpose

The basic format of this treatment is lecture/discussion. As it turns out, the emphasis gets placed on lecture due to the relative unassertiveness of students who are attracted to a speech anxiety workshop. In introducing the workshop, the important point is to make it seem relevant to the participant. In a short set of opening remarks (circa five minutes), the leader states that the participants have indicated anxiety while giving speeches by way of the specific fear survey schedule. The "phenomenology" of this speech anxiety is anticipated by the leader in these opening remarks. In this way the participants come to know that the leader is aware of or in touch with what their problem is. He may ask questions about how a particular student feels physically before speaking. Or he may provide a list of general anxiety symptoms. The point is to establish rapport by a form of "anticipatory empathy."

The leader goes on to say that we will view giving a speech as a stressor. It sets off a set of reactions that the student can learn to deal with by the skills he or she will learn tonight. Specifically, two purposes are given for the workshop: (1) to enable students to become effective speakers and (2) to learn how "cognitive" techniques are used in dealing with speech stress. The remainder of the workshop is organized in two of the three phases of stress inoculation proposed by Meichenbaum and his colleagues.

II. Education Phase

This group does not receive the educational phase of the treatment.

III. Rehearsal Phase

The idea here is to impart the skills that will be used in the application phase. We suggest that the name of this phase be changed to the "Skills" phase (or some equivalent) since this latter label seems more appropriate to what is actually done here.

A. Relaxation: Two methods are used to teach the students to deal with point A of the diagram. The first is to identify with each participant where they are most likely to feel tension. Since relatively unsophisticated students will probably model each other and all say the same general kind of tension response, it is best to start this section off by listing some major types of idiosyncratic physiological arousal. In our study we used rapid or constricted breathing, tension in the neck, tension in the anal sphincter muscles, tension in the area around the forehead, eyes, and nose, and tremulousness.

Each student is then asked where he or she feels the physical arousal the most. Each one is given a technique, e.g., "counter" tension, or slow breathing, to counteract their own idiosyncratic arousal. This part of the SIT takes five to ten minutes.

Secondly, deep breathing is introduced as a skill for all to use right before they speak. As a group, we all practice deep breathing for a minute or two. They are told to use deep breathing

immediately before the stressor hits.

B. Appraisal: Since speech anxious people size up the situation as stressful and as anxiety, the SIT model tries to get the students to look at the stress in a coping way. To this end the four stage model of the Meichenbaum group is offered as the skill to use at point B of the chart. This skill is imparted also in a lecture/discussion format. The four phases are preparing for a stressor, confronting it, being overwhelmed by it, and rewarding oneself for having coped. The self-statements provided in Meichenbaum and Turk (1976) are merely read to the students and their reactions are elicited, e.g., "Yeah, I can see how that works" or "I find that _____ works as well." This phase takes about ten minutes.

C. Self-statements: The coping technique is introduced and defined. The major idea here is for the student to identify the negative self-statements that underlie his or her anxiety and then to replace them with positive coping statements reflective of the reversal of affect strategy. Reversal of affect (REV) is the strategy of looking at the bright side of an unpleasant situation. Examples of the use of REV are derived by going over studies done in lab situations to show its effect. In our study we described two studies done in the lab--one with the cold pressor task in which the person is asked to interpret the water as cool and refreshing and the other with an infant's crying in which the person is asked to think of the interesting fluctuations and variations of the child's wailing.

This section (which lasts about 20 minutes) ends by the group generating a list of REV statements to use with public speaking.

It may be important to "wait them out" until the students come up with the specific statements. We did this and they generated five REV statements:

- (1) At least I learned something.
- (2) It will help me later.
- (3) I have one less speech.
- (4) By doing this, I'll feel better about myself.
- (5) The group will learn something about my topic.

This completes the first session.

Session Two

Since this group did not receive the educational phase of the treatment, a review of the previous session will not be included.

IV. Application Phase

Here the idea is to use the skills to cope with a real stressor--giving a speech to the group. Before this is done, the replacement stage is individualized. Each person generates two negative self-statements they emit when speaking. These are written on a paper in front of them. They then pick two REV statements that they are most comfortable with. This cognitive restructuring is then used in the application phase.

Each student is assigned a speech topic and is given five minutes for preparing a speech on that topic. A set procedure designed to use the skills of stress inoculation was then described. When it came time to give his or her speech, the student was to disclose the negative thoughts he had had (while seated), replace the thoughts with two REV statements, and counter-act their idiosyncratic physical arousal. As they walked to the head of the table, they

were to breathe slowly and deeply. The speech was given and as they walked back to their seat, the person was to reward themselves for having coped.

The students were then called on in a random order to give the speech and go through the coping skills. The leader coaches the coping by instructing the student to do each of the steps described above. This practice speech lasted 30 to 45 minutes and completed the workshop.

APPENDIX J

Treatment Procedure

Session One

I. Introduction and Purpose

The basic format of this treatment is lecture/discussion. As it turns out, the emphasis gets placed on lecture due to the relative unassertiveness of students who are attracted to a speech anxiety workshop. In introducing the workshop, the important point is to make it seem relevant to the participant. In a short set of opening remarks (circa five minutes), the leader states that the participants have indicated anxiety while giving speeches by way of the specific fear survey schedule. The "phenomenology" of this speech anxiety is anticipated by the leader in these opening remarks. In this way the participants come to know that the leader is aware of or in touch with what their problem is. He may ask questions about how a particular student feels physically before speaking. Or he may provide a list of general anxiety symptoms. The point is to establish rapport by a form of "anticipatory empathy."

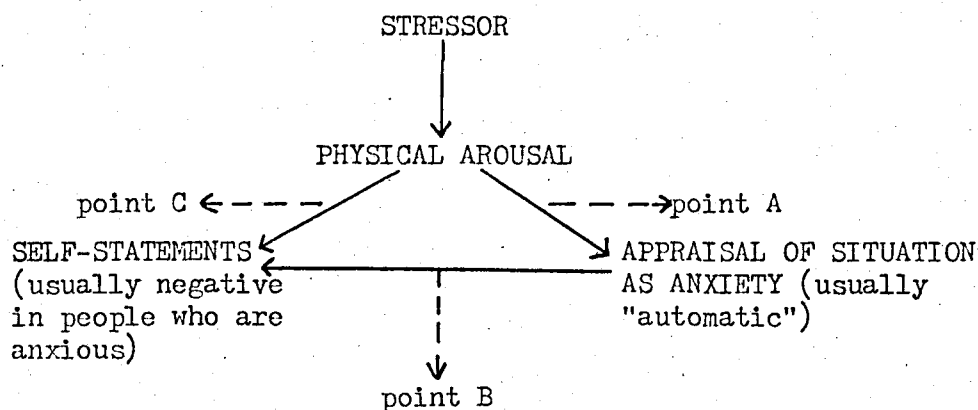
The leader goes on to say that we will view giving a speech as a stressor. It sets off a set of reactions that the student can learn to deal with by the skills he or she will learn tonight. Specifically, two purposes are given for the workshop: (1) to enable students to become effective speakers and (2) to learn how "cognitive" techniques are used in dealing with speech stress. The remainder of the workshop is organized in two of the three phases of stress inoculation proposed by Meichenbaum and his colleagues.

II. Education Phase

A. Model of Emotion

The students are told that the name of this procedure is stress inoculation and the reason for the name is important. The person is given a set of skills which can be used to cope with stress--any stress but mainly speech anxiety.

By using a blackboard or other visual aid the leader constructs the modified Schachterian model used in this variety of SIT. A stressor, be it speaking, having a date, or taking an exam, leads to a predictable set of reactions that are cyclical in nature. The following diagram is used:



Each phase (physical arousal, appraisal, and self-statements) is discussed Socratically with the participants. The leader asks them for their own instances of each phase. He or she also provides overall examples to show the cyclic nature of this model. Three examples were used: asking someone for a date, taking a final exam, and giving a speech. The leader also anticipates the reflective student by briefly talking about the automatic, involuntary and seemingly nonconscious nature of this cycle. In people who are truly anxious it seems as if the model will not fit be-

cause this model requires explicit "talking to yourself." Some anxious people are just anxious and do not have thoughts like that. The appeal to the automatic nature of some stress reaction seems to satisfy this objection.

This phase of the treatment (which takes 15 to 20 minutes) is closed by stating that the idea of SIT is twofold: (1) to provide a set of coping skills to break up the cycle at points A, B, and C and (2) to think a different set of thoughts so that the "automaticity" of the cycle is "slowed down" enough to enable the person to use the coping skills.

III. Rehearsal Phase

The idea here is to impart the skills that will be used in the application phase. We suggest that then name of this phase be changed to the "Skills" phase (or some equivalent) since this latter label seems more appropriate to what is actually done here.

A. Relaxation: Two methods are used to teach the student to deal with point A of the diagram. The first is to identify with each participant where they are most likely to feel tension. Since relatively unsophisticated students will probably model each other and all say the same general kind of tension response, it is best to start this section off by listing some major types of idiosyncratic physiological arousal. In our study we used rapid or constricted breathing, tension in the neck, tension in the anal sphincter muscles, tension in the area around the forehead, eyes, and nose, and tremulousness.

Each student is then asked where he or she feels the physical arousal the most. Each one is given a technique, e.g., "counter" tension, or slow breathing, to counteract their own idiosyncratic arousal. This part of the SIT takes five to ten minutes.

Secondly, deep breathing is introduced as a skill for all to use right before they speak. As a group, we all practice deep breathing for a minute or two. They are told to use deep breathing immediately before the stressor hits.

B. Appraisal: Since speech anxious people size up the situation as stressful and as anxiety, the SIT model tries to get the students to look at the stress in a coping way. To this end the four stage model of the Meichenbaum group is offered as the skill to use at point B of the chart. This skill is imparted also in a lecture/discussion format. The four phases are preparing for a stressor, confronting it, being overwhelmed by it, and rewarding oneself for having coped. The self-statements provided in Meichenbaum and Turk (1976) are merely read to the students and their reactions are elicited, e.g., "Yeah, I can see how that works" or "I find that _____ works as well." This phase takes about ten minutes.

C. Self-statements: The coping technique is introduced and defined. The major idea here is for the student to identify the negative self-statements that underlie his or her anxiety and then to replace them with positive coping statements, reflective of the reversal of affect strategy. Reversal of affect (REV) is the strategy of looking at the bright side of an unpleasant situation. Examples of the use of REV are derived by going over studies done in lab situations to show its effect. In our study we described

two studies done in the lab--one with the cold pressor task in which the person is asked to interpret the water as cool and refreshing and the other with an infant's crying in which the person is asked to think of the interesting fluctuations and variations of the child's wailing.

Students are then asked to generate their own examples of REV from daily life. They usually come up with such things as coping with the drudgery of study by saying that at least you learn something or the valuable experience of "breaking up."

This section (which lasts about 20 minutes) ends by the group generating a list of REV statements to use with public speaking. It may be important to "wait them out" until the students come up with the specific statements. We did this and they generated five REV statements:

- (1) At least I learned something.
- (2) It will help me later.
- (3) I have one less speech.
- (4) By doing this, I'll feel better about myself.
- (5) The group will learn something about my topic.

This completes the first session.

Session Two

I. Review

The purpose here is to determine if the students remember the model provided in the first session (the night before in this study). This is done Socratically by asking questions about stress and how to deal with it. Some of the questions we used were "What are three reactions to a stressor?" "How is a stress

reaction cyclic?" "How do you cope with anxious appraisal of a stressor?," etc. A question is given to each student in turn and the leader simply "goes around the room" until the entire model is reviewed. The leader answers or clarifies any question a student can't answer. This takes about 15 minutes.

II. Application Phase

Here the idea is to use the skills to cope with a real stressor--giving a speech to the group. Before this is done, the replacement stage is individualized. Each person generates two negative self-statements they emit when speaking. These are written on a paper in front of them. They then pick two REV statements that they are most comfortable with. This cognitive restructuring is then used in the application phase.

Each student is assigned a speech topic and is given five minutes to prepare a speech on that topic. A set procedure designed to use the skills of SIT was then described. When it came time to give his or her speech, the student was to disclose the negative thoughts he had had (while still seated), replace those thoughts with the two REV statements, and counteract their idiosyncratic physical arousal. As they walked to the head of the table, they were to breathe slowly and deeply. The speech was given and as they walked back to their seat, the person was to reward themselves for having coped.

The students were then called on in a random order to give the speech and go through the coping skills. The leader coaches the coping by instructing the student to do each of the steps described above. It should be noted that little emphasis is given to the

reappraisal model of four stages of stress used by Meichenbaum. This was simply due to expedience. Other procedures can emphasize it to whatever degree desired. This practice speech lasted 30 to 45 minutes and completed the workshop.

APPENDIX K

Summary of Analysis of Variance for SFSS

SOURCE	SS	df	ms	F	p (.05)
Total	3113.25	27	--		
Between Groups	71.18	3	23.73	.19	(3.40)
Within Groups	3042.07	24	126.75		

Summary of Analysis of Variance for STAI-Pretest

SOURCE	SS	df	ms	F	p (.05)
Total	2996.11	27	--		
Between Groups	44.86	3	14.95	.12	(3.40)
Within Groups	2951.25	24	122.97		

Summary of Analysis of Variance for SE-Pretest

SOURCE	SS	df	ms	F	p (.05)
Total	3504.43	27	--		
Between Groups	204.87	3	68.29	.50	(3.40)
Within Groups	3299.56	24	137.48		

Summary of Analysis of Variance for STAI

SOURCE	SS	df	ms	F	p (.05)
Total	7067.84	55	--		
Between Subjects	4845.34	27	--		
Conditions	220.22	3	73.41	.38	(3.01)
Error b	4625.12	24	192.71		
Within Subjects	2222.5	28	--		
Trials	147.87	1	147.87	2.15	(4.26)
Trials X Conditions	425.90	3	141.97	2.07	(3.40)
Error w	1648.73	24	68.7		

Summary of Analysis of Variance for SE

SOURCE	SS	df	ms	F	p (.05)
Total	8579.84	55	--		
Between Subjects	6674.34	27	--		
Conditions	994.85	3	331.62	1.4	(3.01)
Error b	5679.49	24	236.65		
Within Subjects	1905.50	28	--		
Trials	750.44	1	750.44	19.25*	(4.26)
Trials X Conditions	219.19	3	73.06	1.87	(3.40)
Error w	935.87	24	38.99		

* SIGNIFICANT

Summary of Analysis of Variance for TAS

SOURCE	SS	df	ms	F	p (.05)
Total	2350.84	55	--		
Between Subjects	2096.34	27	--		
Conditions	85.94	3	28.65	.34	(3.01)
Error b	2010.40	24	83.77		
Within Subjects	254.50	28	--		
Trials	2.16	1	2.16	.21	(4.26)
Trials X Conditions	11.08	3	3.69	.37	(3.40)
Error w	241.26	24	10.05		

Summary of Analysis of Variance for AAT-D

SOURCE	SS	df	ms	F	p (.05)
Total	584.56	55	--		
Between Subjects	367.86	27	--		
Conditions	15.89	3	5.3	.36	(3.01)
Error b	351.97	24	14.67		
Within Subjects	216.70	28	--		
Trials	37.79	1	37.79	5.65*	(4.26)
Trials X Conditions	18.32	3	6.11	.91	(3.40)
Error w	160.59	24	6.69		

* SIGNIFICANT

Summary of Analysis of Variance for AAT-F

SOURCE	SS	df	ms	F	p (.05)
Total	505.84	55	--		
Between Subjects	426.34	27	--		
Conditions	90.32	3	30.11	2.15	(3.01)
Error b	336.02	24	14.00		
Within Subjects	79.50	28	--		
Trials	.45	1	.45	.17	(4.26)
Trials X Conditions	15.97	3	5.32	2.02	(3.40)
Error w	63.08	24	2.63		

APPENDIX L

Raw Data

Treatment	STAI		SE		TAS		AAT-D		AAT-F	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
ED ONLY										
1	44	38	61	86	21	26	32	32	24	22
2	54	46	65	59	20	16	34	33	23	22
3	51	77	60	64	23	26	40	41	24	25
4	61	52	63	69	21	19	32	26	24	27
5	51	26	74	95	4	6	32	26	18	20
SKILLS ONLY										
1	57	36	51	77	18	15	35	34	27	27
2	50	49	67	85	15	10	32	34	19	19
3	66	44	68	85	13	23	29	30	29	33
4	39	38	55	61	8	8	29	33	24	23
5	70	66	50	58	20	22	34	30	21	28
6	55	47	78	73	25	21	33	29	25	26
7	51	40	52	73	18	12	38	29	24	24
COMBO										
1	54	60	51	59	17	15	31	27	27	25
2	42	46	46	50	18	21	31	29	25	27
3	48	46	63	62	14	17	34	24	29	31
4	46	36	70	73	16	10	35	34	30	28
5	56	57	53	58	14	17	32	33	24	22
6	43	35	79	81	20	16	31	30	29	28
7	65	46	61	72	12	17	35	37	27	21
8	71	59	51	52	26	25	36	28	26	26

Raw Data...continued

Treatment	STAI		SE		TAS		AAT-D		AAT-F	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post	Pre	Post
NO TREATMENT										
1	44	46	47	62	14	12	31	27	26	26
2	38	61	88	83	9	13	35	35	23	23
3	50	51	55	50	10	8	31	30	28	25
4	41	46	48	51	15	17	31	31	29	28
5	58	56	45	54	24	22	32	32	25	26
6	43	62	70	66	19	29	30	31	23	25
7	77	64	53	65	33	31	30	30	27	28
8	68	72	46	52	26	30	30	34	26	26

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Vita .

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