

The effectiveness of a skills-based program in reducing public speaking anxiety^{1,2}

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Abstract: Research was conducted to test the effectiveness of a skills-based program as a method for reducing anxiety during public speaking. Twenty-five Japanese college sophomores were exposed to a systematic approach for developing a presentation that was theoretically linked to mechanisms to reduce communication apprehension (CA). Students gave four presentations that were graded by both teacher and peer evaluation. Results indicated that the experimental group reported a significantly greater drop in public speaking anxiety than did a control group of 86 students.

Key words: public speaking anxiety, skills training, English ability, gender differences, cross-cultural research.

American students have numerous opportunities to learn and practice presentation skills in both high school and college. In contrast, public speaking has played a minor role in Japanese education. However, the Ministry of Education is calling for renewed emphasis on oral skills, and this has prompted Japanese educators to reconsider their position.

Public speaking is one of the most feared context-based apprehensions in Japan (Pribyl, Keaten, Sakamoto, & Koshikawa, 1998) when measured by the Personal Report of Communication Apprehension (PRCA-24;

McCroskey, 1978). Nishida (1988) noted that Japanese females report higher levels of anxiety in the public speaking context, a result replicated by Pribyl et al. (1998). Research data do not, however, reveal a clear pattern of gender difference in levels of communication apprehension (CA) among Americans (Leary & Kowalski, 1995).

There are three major methods of reducing public speaking anxiety: conditioned anxiety-reduction interventions (i.e., systematic desensitization); negative thought interventions (i.e., rational emotive therapy, cognitive

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restructuring, and visualization); and skills training (i.e., skills training and rhetorical therapy). For a review of CA, see Sakamoto, Pribyl, and Keaten (1998), and for an overview of behavioral treatment programs, see Keaten, Sakamoto, and Pribyl (1999).

Evidence suggests that a combination of the three intervention methods (cognitive modification, systematic desensitization, and skills training) is more effective in alleviating public speaking anxiety than any single method (Allen, Hunter, & Donohue, 1989). However, Friedrich, Goss, Cunconan, and Lane (1997) note that systematic desensitization works best when the nature of the problem is situation specific (e.g., public speaking as opposed to a more generalized dysfunction) and when the problem does not reflect a major skills deficit (p. 316). There are also reports of skills training programs having measurable success (see Allen et al., 1989). As noted earlier, presentation skills classes in English are not commonplace in Japan. Aida (1994) notes that people tend to experience anxiety when expressing themselves in a foreign language in which they do not have full competence (p. 157). McCroskey, Fayer, and Richmond (1985) found a negative correlation between English ability and CA among Puerto Rican students, bolstering the supposition that competence in a foreign language is a correlate of anxiety.

As seen in Table 1, Buss (1980) developed a taxonomy of perceived situational causes of anxiety, which were further developed into seven measurable components: novelty, unfamiliarity, formality, subordinate status, conspicuousness, degree of attention from others, and dissimilarity. Buss based his framework largely on empirical evidence in studies of social evaluation anxiety (Buss, 1986, pp. 39–40), while Beatty offered evidence supporting the validity and reliability of instruments derived from the seven components (Beatty, 1988; Beatty, Balfantz, & Kuwabara, 1989; Beatty & Friedland, 1990).

In sum, public speaking anxiety may stem from numerous sources, such as public speaking skills, fluency in a foreign language, emotional predispositions toward public

speaking, and characteristics of the public speaking situation itself. Based upon a review of the literature, the following hypotheses and research questions were advanced.

- HQ1: Japanese students will report higher levels of anxiety before skills training than do American students.
- HQ2: A skills-based public speaking class will reduce reported levels of public speaking anxiety among Japanese students.
- RQ1: How does gender affect reported levels of public speaking anxiety?
- RQ2: How does English ability affect reported levels of public speaking anxiety?

Method

Instrument

The Personal Report of Public Speaking Anxiety (PRPSA; McCroskey, 1970) was chosen for this study. It consists of 34 questions measuring feelings associated with giving a presentation and has been reported to be unidimensional. Richmond and McCroskey (1998) reported that normalized PRPSA scores fall into five categories (numbers in parentheses are percentages of a normalized population fitting each category): scores of 34–84 indicate low anxiety (5%); 85–92 moderately low anxiety (5%); 93–110 moderate anxiety (20%); 111–119 moderately high anxiety (30%); and 120–170 high anxiety (40%). Mean scores on the PRPSA have rarely been reported, as the instrument was designed and used primarily for identifying highly anxious students. “Highly anxious” is defined operationally as someone with a PRPSA score equal to or greater than 120. The questionnaire is scored by first summing the 22 positive items, then summing the scores of the reversed items, and finally subtracting the total from 132. Scores range from 34 to 170, with a higher score representing more public speaking anxiety. Translation procedures for the PRPSA were carried out with the goal of obtaining equivalency (Newmark, 1988), using the same

Table 1. Cause of anxiety, anxiety trigger, and presumed means of reduction (Beatty, 1988; Buss, 1980)

Cause of anxiety	Defined as	Anxiety trigger	Means of anxiety reduction
Novelty	New set of different experiences Low level of familiarity with surroundings	Speech not offered in secondary schools, thus novel	Guide students through speech process Speeches ordered in increasing levels of complexity First speech not graded Peer evaluation used to screen topics and decide grade
Unfamiliarity	Unknown audience	Unknown classmates present in audience	Icebreakers to decrease tension Collaborative/interactive learning activities to increase familiarity with other students
Formality	Inflexible, highly structured situations	Margin of error reduced by low flexibility, need to follow rules	Use of informal class climate Reduction of classroom rules Explain classroom procedures and grading system in advance
Subordinate status	Differences in status Threat of evaluation	Activity reduced in response to perceived threat of negative evaluation	30% of students' grades decided by classmates (peer evaluation) Coaching behaviors reduce status differences between teacher and students Increased verbal and nonverbal immediacy increases closeness (reduces distance)
Conspicuousness	Acute public self-awareness	Public speaking is a solitary activity	Students introduced by a peer in order to divide the audience's initial focus All students must speak and so the focus is shared among the class
Degree of attention from others	Receiving attention of and being watched by others	Disapproval linked with inattentive audience, expectation of (potentially negative) evaluation	Classmates follow audience etiquette, reducing inattentiveness Classmates taught to use positive nonverbal behaviors Multiple assessments reduce degree of individual assessment Feedback without evaluation for first speech
Dissimilarity	Possessing different attitudes, values, beliefs from someone else and the expectation of a negative experience	Unsure of classmates' attitudes, values, beliefs toward potential speech topics	Collaborative/interactive topic development ensures the topic will be acceptable to the audience Audience analysis techniques help selection of acceptable topics Chosen as a required elective TOEIC levels are similar

back-translation methods employed by Keaten, Kelly, and Pribyl (1997).⁴

Participants

Participants were sophomore English majors at the first author's university. All students must choose a "seminar" class taught by a foreign instructor. The 25 who chose the first author's class, presentation skills, served as the experimental group. There were 3 men (12%) and 22 women (88%). The remaining 86 sophomores served as control group. There were 24 men (28%) and 62 women (72%). The entire sophomore class was given the pre-test questionnaire, but incomplete post-test data reduced the size of the control group. Because participants were not assigned randomly to treatment groups, and pre-test public speaking anxiety scores were controlled for, the research design is best described as quasi-experimental.

Experimental manipulation

The presentation skills class was designed to introduce students to a systematic process for developing and giving presentations in English (see Appendix). In particular, students were taught, in both one-on-one and seminar formats, how to prepare, practice, deliver, and reflect on a presentation. All presentations were videotaped and students were able to review past performances. The class, in terms of length and scope, was similar to a typical presentation skills class found in the United States. One exception was that the Japanese program was completed over one year (45 hours), but in the United States a typical program lasts one semester (48 hours).

Procedures

All participants were given the pre-test in May, 1996. The post-test was distributed to all participants during the last three weeks of the school year. With participant approval at a debriefing session, scores on the Test of English for International Communication (TOEIC) were utilized to measure English ability.

⁴ A copy of the translated questionnaire can be obtained by contacting any of the authors.

Results

Pre-test and post-test PRPSA scores were examined for internal consistency by Cronbach's alpha. The PRPSA showed extremely high levels of internal consistency for both the pre-test ($\alpha = .94$) and post-test ($\alpha = .93$). The test-retest correlation of the PRPSA was .71.

To determine pre-test equivalency between the experimental and control groups,⁵ an independent samples *t*-test was run on pre-test mean scores. The two groups were not significantly different, $t(108) = .27$, *ns*. Participants were then divided statistically into three groups based on PRPSA score: low, medium and high. Levels were determined by calculating one standard deviation from the mean ($M = 115.01$, $SD = 19.41$, $N = 105$). There were no gender differences on the PRPSA pre-test, $t(107) = .49$, *ns*, power = .045.

An analysis of covariance (ANCOVA) was conducted using the treatment condition as the independent variable and post-test PRPSA score as the dependent variable, with pre-test PRPSA and TOEIC scores as covariates. Results indicated a significant effect for treatment, $F(1, 11) = 7.56$, $p < .02$, when controlling for pre-test PRPSA scores and TOEIC scores. In addition, the covariate pre-test PRPSA scores were correlated significantly with post-test PRPSA scores ($t = 3.267$, $p < .010$, $\eta^2 = .493$), while the TOEIC score was not correlated significantly with the post-test PRPSA score ($t = -0.039$, *ns*, power = .046). The covariance model explained approximately 65% of the variance in the post-test PRPSA scores.

As shown in Table 2, analysis of pre-test and post-test PRPSA scores in the experimental and control groups revealed a significant difference between groups in the mean reduction in anxiety, $t = 3.63$, $p < .010$ (one-tailed),

⁵ For the sake of comparison, the non-parametric statistical results (Mann-Whitney *U* rank test for mean differences, corrected for ties) are as follows (number in parenthesis is the *N*, while the *U* indicates the number of times a score in group one is larger than that in group two): differences between pre-test experimental and control PRPSA scores: $U(110) = 982$, $p = .8918$; differences between post-test experimental and control PRPSA scores: $U(16) = 10$, $p = .047$

Table 2. Mean pre-test and post-test PRPSA scores for highly anxious students

	PRPSA pre-test	PRPSA post-test
<i>Experimental group</i>		
Mean	146.60	118.00
SD	13.46	12.14
N	5	5
<i>Control group</i>		
Mean	144.58	137.09
SD	9.31	15.35
N	12	11

$\eta^2 = .422$, $R^2 = .422$. Significant gender differences were observed neither for post-test highly anxious individuals ($t = .92$, *ns*, power = .045), nor for the whole sample ($t = .86$, *ns*, power = .171).

To compare American and Japanese samples across cultures, z -tests for proportions were calculated, comparing the distribution of PRPSA scores in the current study with normative percentages reported by Richmond and McCroskey (1998): low anxiety (scores 34–84), 4.5% ($z = -.22$, *ns*); moderately low anxiety (scores 85–92), 10.0% ($z = 2.41$, $p < .20$); moderate anxiety (scores 93–110), 27.3% ($z = 1.91$, $p < .10$); moderately high anxiety (scores 111–119), 17.3% ($z = -2.91$, $p = .004$); and high anxiety (scores 120–170), 40.9% ($z = .19$, *ns*). As can be seen in Figure 1, the

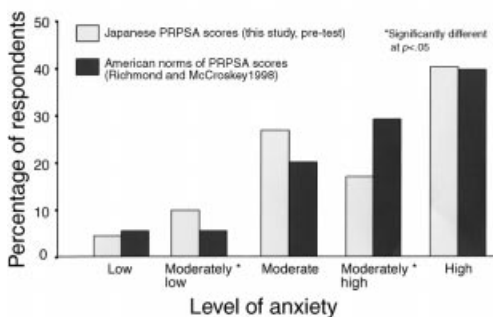


Figure 1. Comparison of the percentages of American (norms) and Japanese (this study, pre-test) falling into the PRPSA categories.

distribution of Japanese and American college students was not significantly different in the low, moderate and high anxiety categories, but more Japanese students were classified in the moderately low anxiety category, and more Americans were classified in the moderately high anxiety category.

Discussion

The purpose of this research was to measure the effectiveness of a skills training program on public speaking anxiety. In brief, students receiving skills training reported a significantly higher drop in public speaking anxiety when compared with members of a control group.

Japanese and American college students have similar distributions of high, medium, and low public speaking anxiety. Japanese college students report more moderately low levels of anxiety, while Americans report more moderately high levels of anxiety. The overall pattern suggests that more students are classified as higher in public speaking anxiety in both countries when using the distributions proposed by Richmond and McCroskey (1998).

Although both Japanese and American college students reported similar levels of public speaking anxiety, the cause of the anxiety may not necessarily be similar. Until the causes of public speaking anxiety are investigated, researchers cannot assume that all treatment strategies used in the United States will be appropriate for Japanese students.

Members of the treatment group were taught presentation skills. The foundational assumption of skills training is that students lack adequate skills and are thus anxious (Phillips, 1991). Because none of the students in the experimental group had ever taken a presentation skills class, it is possible to assume that they lacked formal public speaking skills. After being exposed to a year-long presentation skills class, students classified as highly anxious reported a reduction of almost 30 points in PRPSA scores (Table 2), in contrast to highly anxious students in a control group, who reported a six-point drop.

Prior research in the United States has shown that various interventions, including skills-based training programs, have been successful in treating public speaking anxiety (Kelly, 1997). Table 1 offers an outline of the factors which Buss (1980) and Beatty (1988) proposed as situational causes of CA, along with the methods used in the presentation skills class. As shown in the Appendix, a line-by-line analysis of the causes (and mechanisms) of situational anxiety and of the features of the skills-based class points toward the possibility that following this curriculum can lead to a reduction in the situational causes of public speaking anxiety. However, we cannot ascertain whether the treatment effect is due to increased skill, reduced situational anxiety, a relaxed classroom atmosphere, or a combination of all three.

To determine whether the reason for the lack of gender differences was due to the questionnaire, the six questions which deal with public speaking in the PRCA-24 were extracted from the PRPSA and treated as a separate variable. *Post hoc* analysis failed to reveal significant differences between genders for those six items, which leads us to believe the cause of the discrepancy in gender differences is probably not the questionnaire. Three prior studies (McCroskey, Gudykunst, & Nishida, 1985; Nishida, 1988; Pribyl et al., 1998) suggested gender differences in levels of public speaking anxiety exist among Japanese populations, but this study found no significant gender differences in PRPSA scores. These results are tentative at best, as only three males were in the experimental group.

Finally, evidence collected in this study indicated that public speaking anxiety and English ability are not significantly correlated. In other words, the negative relationship that was theorized to exist between English ability and CA was not supported.

Although skills training appears to be an effective way of reducing self-reported public speaking anxiety, future research needs to assess the causal nature of public speaking anxiety among Japanese college students. Further research is also required to identify the

relative contribution of increased skill, reduced situational anxiety, and relaxed classroom atmosphere to anxiety reduction. Identifying underlying mechanisms of public speaking anxiety will likely increase the effectiveness of the interventions.

Evidence supporting the internal consistency and content validity of the PRPSA among Japanese students was found. What needs to be determined next, in a cross-cultural context, is whether the PRPSA is able to predict behavioral manifestations of public speaking anxiety, such as unnatural body language, lack of fluency, and behavioral disruptions.

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Appendix. Curriculum of the presentations skills program

The goal of the program (Table 3) was to give students the necessary background in order for them develop an effective presentation in English, to teach the students the specific techniques needed to give an effective presentation, as well as to provide them with a chance to practice the skills learned. The curriculum was designed with the following in mind. First, students enrolling in the presentation skills class had no experience in presentations skills, thus the basics needed to plan and deliver a presentation were outlined. Second, the students were non-native speakers of English, thus the explanations were conducted in depth.

Skills were nested in each other and introduced step by step. For example, when visual aids were introduced, students were given a chance to use them in their second presentation for a weighted score of only 10% of their grade. During the next presentation, the weighting for the visual aid was increased to 20%, and the weighting was further increased to 30% for the final presentation.

Students were encouraged to look at the process of making a presentation as a circular one. The process does not come to an end when the presentation finishes, but instead moves through to evaluation in the form of peer and teacher feedback. Although the steps are distinct, they are interrelated. Thus the end of one presentation becomes the basis of audience analysis for the next presentation.

Table 3. Course topics and areas of anxiety reduction

Topic	Main area of plausible anxiety reduction ^a
<i>Introduction to speech</i>	
What a speech is	Novelty
Why speeches are given	Dissimilarity
Kinds of speeches	Novelty
Goals of speeches (in this class)	Unfamiliarity
Explanation of grading criteria	Formality
<i>The speech process</i>	
Audience analysis	Novelty
Speech topic generation	Dissimilarity
Outline preparation	Novelty
Development of ideas	Unfamiliarity
importance of introduction	Degree of attention from others
parts of introduction	Dissimilarity
importance of conclusion	Degree of attention from others
parts of conclusion	Dissimilarity
<i>Delivery techniques</i>	
Vocabulary usage	Degree of attention from others
Syntax	Degree of attention from others
Figures of speech	Degree of attention from others
Stylistic arrangement	Degree of attention from others
Posture	Conspicuousness
Eye contact	Conspicuousness
Gestures/body language	Conspicuousness
Use of note cards	Conspicuousness
Voice inflection/quality	Degree of attention from others
<i>Evaluation</i>	
How to evaluate a peer's speech	Subordinate status
How to evaluate one's own speech	Dissimilarity
self video analysis	Novelty
evaluative writing exercises	Degree of attention from others

^a Although each topic has multiple anxiety reduction mechanisms, only the main area of anxiety is shown, for the sake of brevity.