

Efficacy of Voice Pedagogy Training on Communication Apprehension and Social Facilitation

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Abstract

We investigated whether voice pedagogy training can help ameliorate apprehension about giving a public speech (called communication apprehension, or CA) and whether such benefit is specific for the expected level of expertise of the audience to whom the speech is given. A pretest-posttest design was used involving three levels of treatment condition (voice pedagogy treatment, placebo treatment, and control), two levels of audience expertise (novice vs. expert), and four dependent variables (trait CA; State CA; Willingness to Communicate; and Self-Perceived Communication Competence). The results showed that those participants who underwent voice pedagogy training revealed a greater reduction of trait and state CA, and a greater willingness and competence to communicate, than individuals who were in the control or placebo conditions. There was no effect of the level of audience expertise. Voice pedagogy training should therefore be considered as an important training regime for reducing fear of public speaking.

Introduction

In most if not all societies, human behavior is organized in such a way that individuals occupy various positions across different status levels involving different kinds of hierarchies, a phenomenon called social stratification (Shapiro, 2004). In general, those individuals who perceive themselves at a lower expertise level of a given hierarchy are likely to experience fear and anxiety when communicating with those whom they perceive to be at a higher expertise level of the hierarchy (Phillips, 1991). Importantly, individuals who experience such fear or anxiety associated with real, or anticipated, social communication are said to have communication apprehension (CA), which is fear associated with public speaking (McCroskey, 1977).

Communication Apprehension

There are two types of CA. One type, trait CA, is thought to represent an endogenous predisposition to experiencing fear about public speaking. McCroskey (1977a) noted that this type of CA involves a stable personality-type of CA which occurs across various communicative situations over time. For example, a person may experience high levels of trait CA when speaking in front of an audience, speaking in a small group, or communicating interpersonally. The other type of CA is state CA, which is thought to be limited to a given social context at a given point in time. Buss (1980) pointed out that this type of CA represents the reactions of an individual which are specific to the perceived situational constraints generated by other persons or groups in a given social setting. Some of the important factors that contribute to this type of CA are unfamiliarity, dissimilarity, subordinate status, formality, and a degree of attention one receives from others (Beatty, Springhorn & Kruger, 1976; Buss, 1980).

Communication researchers have pointed out that both trait and state CA involves physiological reactions, cognitive experiences, affective states and behavioral responses (Behnke & Beatty, 1981; Ayres, 1986).

Research into the physiological characteristics of CA have found that the heart rate of individuals with CA can be elevated (Behnke & Beatty, 1981). Studies into the cognitive experiences associated with CA have revealed that their thought processes can be illogical or irrational (Daly, McCroskey, Ayres, Hopf, & Ayres, 1997) by believing that the audience's expectations are not being met (Ayres, 1986; Beatty, 1988). Investigations into the affective component of CA suggest that emotional feelings of anxiety and shyness accompany the experience (Buss, 1986; Daly, McCroskey, Ayres, Hopf, & Ayres, 1997). Finally, research into the behavioral component of CA has revealed that individuals with high CA lack skills to communicate with others (Kelly, Phillips & McKinney, 1982).

Voice Pedagogy

In a recent study (Tedesco & Patterson, submitted), we investigated the effect of brief (10-minute) voice pedagogy training on the remediation of CA, as well as the effect of environmental context. The voice pedagogy training involved having the participants view and practice along with videos elements of voice and singing exercises (e.g., slowly singing the notes of a major scale, or undergoing breathing and physical relaxation exercises). To provide insight into whether the potential benefits of such training might be attributable to psychological conditioning, the effect of varying the environmental context (i.e., room and associated cues) in which an impromptu speech was given, relative to the context in which the training occurred, was examined.

The results showed that brief voice pedagogy training significantly lowered trait and state CA scores, while increasing scores on instruments measuring competence and willingness to communicate. Thus, we suggested that voice pedagogy training should be considered a reasonable treatment for individuals with high levels of CA. That voice pedagogy training helped individuals with CA is not surprising given that such training is known to help in reducing anxiety in professional singers (Miller, 1996). In doing so, the voice pedagogy exercises reduce muscle tension, psychological tension, and voice tension, as well as improve breath management. Moreover, the greatest effect of the training occurred in the group that received the training and gave the speech in the same room as opposed to different rooms, an effect attributable to the importance of stimulus cues involved in the process of psychological conditioning.

In addition to the likely involvement of psychological conditioning, the fear and anxiety associated with CA may also entail a social comparison process. Recall that individuals who perceive themselves at a lower expertise level of a social status hierarchy may experience a heightened form of CA when communicating with individuals whom they perceive to be at a higher expertise level of a social hierarchy (Phillips, 1991). This phenomenon, in turn, implies the operation of a social comparison process. Thus, the process of social comparison may be a core component of the expression of CA.

Social Facilitation

In the psychological literature, a phenomenon related to social comparison is social facilitation. Social facilitation refers to a change in behavior when an individual is in the presence, or believes they are in the presence, of another individual or group of individuals (Blascovich, Mendes, Hunter, & Salomon, 1999). Importantly, the performance can be enhanced or impaired by the presence of others who serve either as coactors or as an audience (Triplet, 1898; Allport, 1924; Huguot, Galvaing, Monteil, & Dumas, 1999). Zajonc (1965) suggested that the mere presence of others was a condition sufficient to bring about increased drive (arousal) that leads to dominant responses in so far as the presence of others facilitated performance when the task was familiar or easy, but it hindered performance when the task was unlearned or difficult. Zajonc (1965; Zajonc, Heingartner, & Herman, 1969) argued that such arousal is innate and unlearned.

However, Cottrell (1968, 1972) has argued that experiments in social facilitation involve tasks in which negative outcomes as well as positive outcomes may be associated with the presence of others. He believed that a socially induced arousal was due to some form of evaluation anxiety rather than the mere presence of others. In his evaluation apprehension theory, an individual learns from socialization experiences when to anticipate positive and negative outcomes associated with the presence of others.

Thus, it is reasonable to conjecture that high levels of CA may be created by the anticipation of performing a poorly-learned task and the subsequent impending negative evaluation. Alternatively, low levels of CA may result from the anticipation of performing a well-learned task and the subsequent positive evaluation. These predictions would apply to state CA, but it would be interesting to determine whether such effects would be observed, perhaps to a lesser degree, with trait CA.

The present study investigated whether voice pedagogy training can help ameliorate CA and whether such benefit is related to a social comparison process by determining whether such benefit is specific for the expected level of expertise of an audience to whom a speech is given. In doing so, this study served as a replication of Tedesco and Patterson (submitted) as well as an examination of whether social comparison may be an important component of CA in addition to the conditioning component revealed by those authors.

The approach to this study was to investigate the efficacy of voice pedagogy training on lowering CA while manipulating the expected level of expertise of an audience held on the part of the participants. Specifically, the level of audience expertise assumed by the participants before voice pedagogy training was undertaken was either kept the same or varied following voice pedagogy training. If CA involves a social comparison process, then we would expect greater efficacy of the training for those individuals for whom the assumed level of audience expertise was constant relative to those participants for whom the assumed level of audience expertise was varied.

Methods

Participants

The 238 participants (59% female, 41% male) who volunteered for this study were undergraduates enrolled in one of several undergraduate courses at Washington State University during fall and spring semester of 2004 and 2005. Participants with high levels of self-reported CA were those who scored one standard deviation above the mean on the personal report of communication apprehension (PRCA) scale. The participants were paid four dollars and given extra credit in the respective classes for serving in the study.

Instruments and Materials

Four dependent variables were measured in this study: (1) the Personal Report of Communication Apprehension (PRCA) containing 5 questions in a Likert-type format (1=strongly agree, 2=agree, 3=undecided, 4=disagree, 5=strongly disagree), which measures a person's level of trait CA; (2) the state CA subscale (Spielberger, Gorsuch, & Lushene, 1970) containing five questions that also employs a 5-point Likert-type scale; (3) the Willingness to Communicate instrument (McCroskey, 1992) containing three items each ranging from 0-100%; and (4) the Self-Perceived Communication Competence instrument (McCroskey & McCroskey, 1988) containing a three-item scale ranging from 0-100%. These latter two scales measure an individual's predisposition to approach or avoid communicative contact, and a person's perception of her or his ability to communicate in a public speaking situation, respectively (McCroskey, 1992; McCroskey & McCroskey, 1988). All four measures have been shown to be reliable and valid (Beatty, Dobos, Balfantz, & Kuwabara, 1991; Levine & McCroskey, 1990; McCroskey, 1992; McCroskey & McCroskey, 1988;

Design

This experiment used a pretest-posttest design involving three levels of treatment condition (voice pedagogy treatment, placebo treatment, and control), two levels of audience expertise (novice vs. expert), and the four dependent variables discussed above.

Procedure

In all conditions, the participants filled out and completed the four dependent measures both at the beginning and at the end of the experimental session. After completing the measures at the beginning of the session, the participants were told about an impromptu speech they were required to perform, and about the expertise level of the audience they were to expect. Next, the participants engaged in one of three different regimes during a 10-minute period during the session (see below). Finally, the participants were next required to perform an impromptu speech in a different room?? to an audience of XX members.

In the voice pedagogy training condition, the participants were exposed to the voice pedagogy written script and then required to see, listen and perform the exercises during the 10-minute period during the session. In the placebo condition, the participants viewed the voice pedagogy training video with no sound and performed no voice exercises during the 10-minute period. In the control condition, the participants were asked to sit in a chair and wait for 10 minutes without being exposed to any video presentation and without performing any voice exercises.

Half of the individuals in each condition described above were told to expect an expert level of audience expertise at the beginning of the session. Of those participants, half of them were told that the audience was indeed expert while the other half were told the audience was instead novice just before their impromptu speech was begun.

Furthermore, the other half of the individuals in each condition were told to expect a novice level of audience expertise at the beginning of the session. Of those participants, half of them were told that the audience was instead expert while the other half were told the audience was indeed novice just before their impromptu speech was begun. Thus, taken together, one half of the participants had their expectations violated with respect to the level of expertise of the audience, and the other one-half did not, at the beginning of their impromptu speech.

Data Analyses

The data were analyzed by computing a 2 (violated vs. non-violated expectations) X 3 (control, placebo, or voice pedagogy conditions) MANOVA on normalized scores for the four dependent variables (i.e., PRCA, SCA, WTC, and SPCC measures). Normalized scores were computed by taking the ratio of posttest scores divided by pretest scores. When a significant difference emerged, a Bonferroni post hoc comparison test was used to determine where the significant difference existed.

Results

For each dependent variable separately, normalized scores were averaged together to provide a mean normalized score for each condition. Novice and expert audience expectations were collapsed into a non-violated expectation condition (e.g., novice to novice, or expert to expert) and a violated expectation condition (e.g., novice to expert, or expert to novice).

Figures 1 and 2 show that those participants who underwent voice pedagogy training showed a greater reduction of trait and state CA scores, respectively, than those who were in the control or placebo conditions. Moreover, Figures 3 and 4 reveal that those individuals who experienced the training reported greater positive benefits in terms of WTC scores and SPCC scores, respectively, than those who were in the control or placebo conditions. Among those in the voice pedagogy group, the greatest reduction of the normalized trait and state CA scores, and the greatest increase in normalized WTC and SPCC scores, occurred for participants whose expectations were not violated.

A 2 X 3 (expectations X condition) MANOVA was used to compare mean normalized scores for the four measures collectively. This analysis revealed that there was a main effect of Condition on at least one of the four dependent variables, Hotelling's Trace = .54, $F(8, 456) = 15.44$, $p < .001$. Follow-up ANOVAs indicated that there were main effects of condition on each of the four dependent variables: (1) PRCA $F(2, 232) = 22.79$, $p < .001$, (2) SCA $F(2, 232) = 20.53$, $p < .001$, (3) WTC $F(2, 232) = 21.00$, $p < .001$ and (4) SPCC $F(2, 232) = 28.29$, $p < .001$. Bonferroni post-hoc comparisons indicated that both normalized trait and state CA scores were the lowest among those in the voice pedagogy group ($p < 0.05$). Also, the highest normalized SPCC and WTC scores were in the voice pedagogy group ($p < 0.05$).

Furthermore, the MANOVA showed that there was no reliable main effect of violated versus non-violated expectations, Hotelling's Trace = 0.002, $F(3, 110) = 0.64$, $p = 0.98$. Finally, the MANOVA revealed that there was no interaction between expectations and condition, Hotelling's Trace = .07, $F(8, 456) = 1.86$, $p = 0.06$.

Compared to the control and placebo groups, those in the voice pedagogy group showed the greatest improvement in terms of reduced CA and increased communication competency. However, there was no reliable effect of violation of expectations.

Discussion

The results of this study reveal that brief voice pedagogy training lowers measures of communication apprehension and, at the same time, increases measures of communication competency and willingness. When individuals with high communication apprehension must give a public speech, having them go through voice pedagogy exercises helps produce a relaxed posture, proper breathing, and a relaxed voice, while at the same time producing confidence that will be beneficial for performing publicly (Miller, 1996). Importantly, these results replicate an investigation by Tedesco and Patterson (submitted), which also found that voice pedagogy lowers CA and increases communication competency. Thus, voice pedagogy can serve as one of several techniques, such as relaxation (e.g., Wolpe, 1958) or visualization (e.g., Ayres, Hopf, & Ayres, 1997), that helps ameliorate the fear and stress that accompanies public speaking.

The present study investigated whether voice pedagogy training is specific for the expected level of expertise of the audience to whom the speech will be given and, in so doing, to what degree the effect of such training is based on social comparison.

In this study, participants were led to believe they would perform a public speech in front of audience members with novice or expert levels of expertise, prior to being exposed to voice pedagogy training, an expectation that subsequently was either violated or not. This manipulation was based on the idea that when people give a speech, they compare their own ability level to the perceived expertise of an audience, a social comparison process which is a component of evaluation apprehension theory (Cottrell, 1968; Ayres, 1997; Parks & Sanna, 1999). Moreover, it was hypothesized that each participants' initial expectation of audience expertise served as a baseline to which she or he compared an expected performance level, and that this baseline level was psychologically adjustable. A positive outcome of the comparison should lead to more willingness to communicate, more communication competence, and less CA, and a negative outcome of the comparison should lead to the opposite (Ayres, 1997).

However, we found that the effect of violation of expectations on the efficacy of voice pedagogy training was not significant. There are at least three interpretations of this outcome: (1) the study lacked sufficient statistical power; (2) the baseline level of initial expectation was not psychologically adjustable; (3) voice pedagogy training affects psychological processes that do not involve social comparison. We reject the first interpretation because the sample size in our study was 39 or 40 participants per condition, which should have been more than sufficient to detect a significant effect in the population. Indeed, our sample size in this study (39 or 40 participants per condition) was sufficient to pick up a significant effect of voice pedagogy training, and in a previous study (Tedescoe & Patterson, submitted) involving a similar sample size (40 participants per condition) we found a significant effect of voice pedagogy training as well as a significant effect of environmental cues. We also reject the second interpretation offered above because we believe that expectations are psychologically adjustable, as everyone knows from anecdotal evidence in real life.

Rather, we believe that the third interpretation is correct: voice pedagogy training affects psychological processes that do not involve social comparison. Support for this interpretation comes from our previous study (Tedescoe & Patterson, submitted), where the effect of varying the environmental context (i.e., room and associated cues) in which an impromptu speech was given relative to the context in which the training occurred was examined. The results of that study showed that the significant benefit of voice pedagogy training was dependent upon the environmental context in so far as the greatest effect of the training occurred in the group that received the training and gave the speech in the same room as opposed to a different room. This effect was attributable to the importance of stimulus cues involved in the process of psychological conditioning, which may be largely unconscious and may involve processes different from social comparison.

In summary, the results of this study reveal that elements from voice pedagogy training can be employed in a brief episode to significantly reduce the experience of communication apprehension as well as increase the perceived competency and willingness to speak in public. Voice pedagogy training should therefore be considered as an important training regime in the educators' arsenal for ameliorating fear of public speaking.

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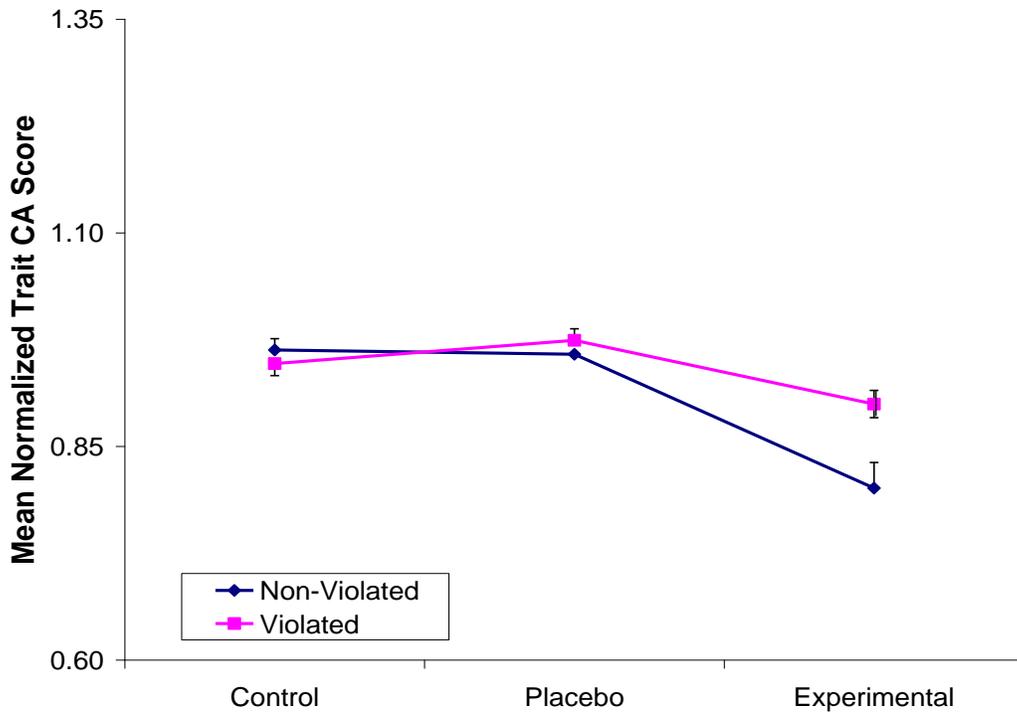


Figure 1. Normalized scores on trait CA measure for control, placebo, and voice pedagogy training conditions, with the violated vs. non-violated variable given as parameter. Each symbol (■/◆) represents the mean of 40 participants. Error bars indicate plus and minus one standard error of the mean.

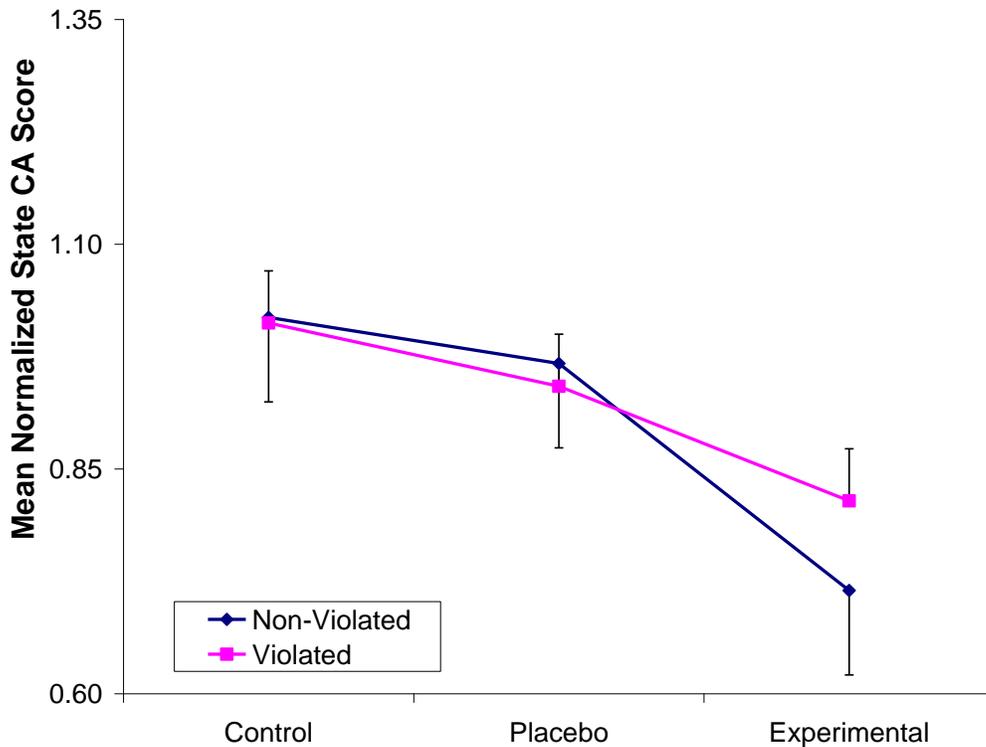


Figure 2. Normalized scores on state CA measure for the control, placebo, and voice pedagogy training conditions, with the violated vs. non-violated variable given as parameter. Each symbol (■/◆) represents the mean of 40 participants. Error bars indicate plus and minus one standard error of the mean.

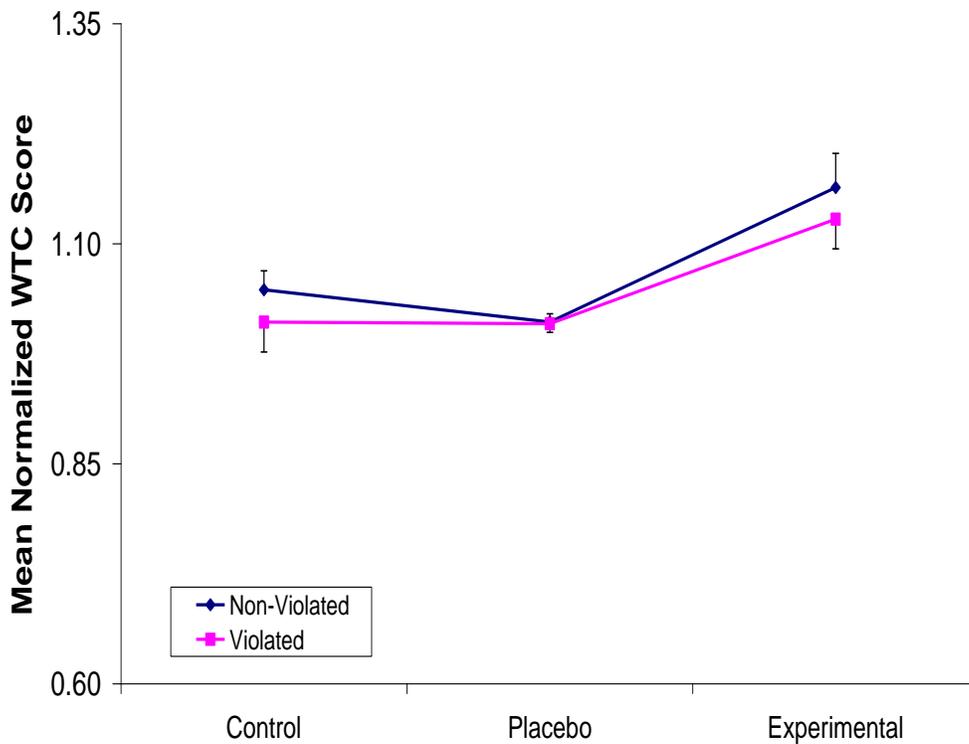


Figure 3. Normalized scores on WTC measure for the control, placebo, and voice pedagogy training conditions, with the violated vs. non-violated variable given as parameter. Each symbol (■/◆) represents the mean of 40 participants. Error bars indicate plus and minus one standard error of the mean.

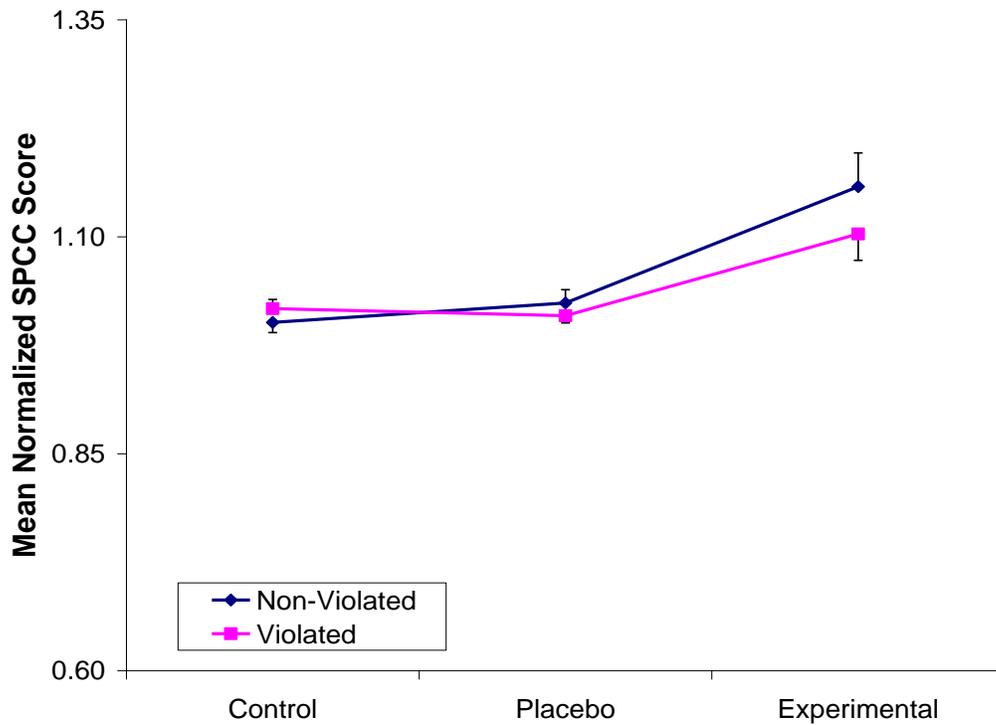


Figure 4. Normalized scores on SPCC measure for the control, placebo, and voice pedagogy training conditions, with the violated vs. non-violated variable given as parameter. Each symbol (■/◆) represents the mean of 40 participants. Error bars indicate plus and minus one standard error of the mean.