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The Use of Video Self-Modeling to Treat Public Speaking Anxiety

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The Use of Video Self-Modeling to Treat Public Speaking Anxiety

By

Alicia M. Kruger

A Thesis Submitted in Partial Fulfillment of the

Requirements for the Degree of

Master of Arts

In

Clinical Psychology

Minnesota State University, Mankato

Mankato, Minnesota

May, 2013

Table of Contents

Introduction.....	4
Social Phobia.....	4
Public Speaking Anxiety Prevalence and Current Treatments.....	4
Video Self-Modeling Uses and Efficacy.....	6
Video Self-Modeling and Public Speaking Anxiety.....	6
Methods.....	7
Screening Participants for Public Speaking Anxiety.....	7
Measurements.....	8
Design.....	9
Results.....	11
SUDS Results.....	11
Direct Observation Results.....	13
Satisfaction Survey Results.....	15
Discussion.....	15
Limitations and Implications.....	15
Future Research.....	17

Abstract

The current thesis is *The Use of Video Self-Modeling to Treat Public Speaking Anxiety* by Alicia Kruger and is for partial fulfillment of a Master of Arts Degree in Clinical Psychology at Minnesota State University, Mankato in Mankato, Minnesota. The study was completed in May, 2013 and attempts to evaluate the effect of video self-modeling (VSM) on public speaking anxiety. VSM is a form of social learning where the individual serves as his own model for vicarious learning. The Personal Report of Confidence as a Speaker was administered to 101 psychology undergraduates to screen for public speaking anxiety. Eleven participants met inclusion criteria, and two elected to participate in the study. A multiple baseline across participants with generalization probes was implemented to study the use of VSM as a treatment for speech anxiety. Results indicate that VSM is not an effective treatment for public speaking anxiety because there were no robust changes in public speaking anxiety from baseline to treatment phase. The largest changes depicted in one participant utilized what may be a faulty direct observation system.

Introduction

Social phobia is a marked and persistent fear of at least one social situation (American Psychological Association [APA], 2000). Individuals with social phobia typically avoid social situations or endure them with great anxiety. Often, they are intensely afraid of criticism or of acting in a humiliating or embarrassing way. The fear causes extreme distress or significantly interferes with daily functioning (APA, 2000). Speech anxiety is a very common form of social anxiety, and many individuals with speech anxiety have subclinical social anxiety. Although 20% of people report an excessive fear of public speaking or performance, only two percent experience enough impairment or distress to meet criteria for social phobia (APA, 2000). Additionally, 21.4% of people have reported a lifetime social fear with social anxiety being the most common (Kessler et al., 2005). Current speech anxiety treatments include exposure therapy, cognitive restructuring, relaxation strategies, virtual reality exposure, and medication, but these treatments may be too intense, time-consuming, or costly to treat what is most likely a subclinical form of social anxiety (Magee, Erwin, & Heimberg, 2009).

In exposure therapy, the client progressively confronts anxiety-provoking stimuli or situations until those stimuli no longer elicit anxiety. Typically, the client ranks the stimuli or situations with guidance from the clinician to guide treatment (Magee et al., 2009). When treating speech anxiety, the situations or stimuli may include standing for a specified amount of time at the podium with no in vivo audience, standing at a podium imagining an audience is in vivo, standing for a specified amount of time at the podium

with an in vivo audience, and giving progressively longer speeches until the client is no longer anxious about delivering a speech.

Cognitive restructuring is a technique that challenges maladaptive beliefs to create a more realistic worldview and is typically combined with exposure therapy to treat speech anxiety. The progressive nature of exposure therapy as well as the reforming of an individual's thought processes in cognitive restructuring require an extended amount of time that may be not be appropriate for individuals with subclinical social anxiety. Additionally, exposure therapy needs to provoke excessive anxiety to be effective, and if this unneeded distress in a client can be avoided, it should be (Clark et al., 2009)

Relaxation strategies are another common treatment for speech anxiety. Currently, there are two that have been attempted in the treatment of public speaking anxiety: progressive muscle relaxation and applied relaxation. Progressive muscle relaxation involves tensing and relaxing muscle groups one at a time to achieve a more stress-free state overall, but progressive muscle relaxation alone has not been shown to be effective in treating speech anxiety (Al-Kubaisy et al., 1992). Applied relaxation is the combination of progressive muscle relaxation with exposure therapy to associate relaxation with the anxiety-provoking stimulus or situation. Although it has been shown to be somewhat effective when treating speech anxiety, it has not been shown to be as effective as cognitive therapy (Liebowitz, 1999). With such low efficacy, both relaxation techniques should not be used unless other more effective therapies have failed.

A recently researched therapy, virtual reality exposure, shows some promise. In virtual reality exposure, the client uses special equipment to simulate an in vivo audience. Virtual reality exposure may take less time than traditional exposure and would not

require confederates to act as the audience. In addition, it has been shown to be as effective as cognitive therapy but with a lower dropout rate (Safir, Wallach, & Bar-Zvi, 2012). Though virtual reality has shown promise as a treatment, special equipment is needed to perform the therapy. This equipment is expensive and not readily available, making virtual reality exposure neither more convenient nor more cost-effective than traditional exposure therapy.

A theory behind speech anxiety is that individuals with public speaking phobias do not have the necessary skills to be successful speakers. Therefore, these individuals' anxiety should be reduced after receiving speech skills training. However, speech skills training alone has been found to be sufficient to reduce speech anxiety, suggesting that speech skills training is a supplemental treatment rather than being a separate therapy on its own (Worthington, 1984).

Another common avenue for treating anxiety of any sort is medication. Anti-anxiety medications have been shown to be effective in the treatment of public speaking anxiety, but they may not have lasting effects. Once the subject discontinues the medication, the effects typically subside (Liebowitz, 1999).

Video self-modeling (VSM) is an intervention based on Bandura's social learning which posits that individuals can learn vicariously through models (Bandura, 1969). Bandura also hypothesized that an individual would learn better if the model were more similar to him or her. For example, women would learn better from female models than from male models. VSM is the observation of oneself behaving adaptively and at a higher function than is currently possible. It has been shown to be effective in a variety of different areas such as mild depression, anxiety, and sports skills (Dowrick & Jesdale,

1990; Franks & Malle, 1991). It has most commonly been implemented with individuals with autism, teaching them language and social skills, appropriate social interactions, and daily tasks as well as reducing off-task behavior (Gelbar et al., 2010).

Currently, only one study examining the effects of VSM on speech anxiety has been published (Rickards-Schlichting, Kehle, & Bray, 2008). This study demonstrated promising results but suffered from some limitations. The authors claimed they used a multiple-baseline design, but did not stagger treatment. Essentially, the study was a replicated A-B design, which can lead to poor experimental control as an outcome. An A-B design with a withdrawal or reversal would also not be an appropriate design to use with VSM because it is a form of learning, and withdrawal of something once learned is not practical and often not possible. In addition, they only collected data at baseline and follow-up, not during treatment, so they were unable to adjust the experiment as needed resulting in a quasi-experiment.

This study also used a sample of high school students. Other samples are needed to determine if VSM's efficacy with speech anxiety is generalizable. Compared to other treatments for public speaking anxiety, VSM may be a faster, easier, and more convenient way to treat a likely subclinical case of social phobia, and the purpose of the present study is to evaluate the treatment of speech anxiety with VSM.

Methods

Participants

The Personal Report of Confidence as a Speaker (PRCS) was administered online to 101 undergraduate psychology students. Three scores were omitted due to missing items. The mean score was 15.48 ($SD=7.48$). Because there is no agreed upon cutoff

score in the literature, a 90th percentile criterion (a score of 26 out of 30) was used to ensure the individuals treated had public speaking anxiety (Phillips et al., 1997). Eleven participants met this inclusion criterion (a score of 26 or higher), and out of those individuals, two elected to participate. The two participants were both female psychology undergraduates who identified as Caucasian. They were not prescribed any psychiatric medications, taking any speech classes, or currently receiving any psychological treatment, all of which could confound the results of treatment.

Measurements

The PRCS is a 30-item self-report scale measuring speech anxiety, and half of the true-false items are negatively coded. The current form of the scale is an amended version developed by Paul (1966) that uses the 30 most predictive items of the original 114-item scale. It has demonstrated adequate internal reliability ($\alpha=.91$) and convergent validity ($r=.83 - .85$) (Daly, 1978). Sample questions include “I look forward to an opportunity to speak in public,” “I feel that I am in complete possession of myself while speaking,” and “I perspire and tremble just before getting up to speak.”

A frequency within interval direct observation method was used to measure speech anxiety during recorded speeches. Speech anxiety was defined by the following behaviors, a quivering voice, speaking too quickly, speaking too softly, stammering, hunting for words (i.e., searching notes or using uh, um, or like), clearing throat, swallowing, lack of eye contact (i.e., breaking eye contact for more than 3 seconds), and motionlessness (i.e., not moving or gesturing for more than 10 seconds). Thirty percent of observations were rated by two observers, and inadequate interobserver agreement was demonstrated using both kappa and point-by-point agreement ($\kappa = .12$, Point-by-Point

Agreement = 65.90%). Although point-by-point agreement is more common in the literature, kappa is more stringent because it accounts for chance agreement, so both measurements are given. Agreement this low indicates that the direct observation of behavior indicative of speech anxiety may not be a reliable assessment and calls the results of this assessment into question.

A Subjective Unit of Discomfort Scale (SUDS) was also implemented before and after each given speech to gain a self-report rating from the participants. SUDS ratings have demonstrated adequate convergent validity with Global Assessment of Functioning (GAF) scores ($r = -0.439$, $p < .001$) and the A scale and neurotic index of the Minnesota Multiphasic Personality Inventory (MMPI) ($r = 0.351$, $p < .05$ and $r = 0.366$, $p < .01$, respectively). Additionally, SUDS ratings have demonstrated sensitivity to treatment change with patients experiencing a significant decrease in SUDS ratings following three months of psychotherapy ($t = 4.686$, $p < .001$) (Tanner, 2012).

To assess client satisfaction with the treatment, a short self-report questionnaire was given at the end of treatment. This questionnaire included items aimed to measure client perceptions on the efficacy of treatment, the utility of treatment, and possible gains made due to treatment (see Appendix).

Design

I employed a multiple-baseline-across-participants design. VSM is a form of learning, so a withdrawal or reversal design would be inappropriate as there is no way to withdraw or reverse learning. For the baseline phase, participants delivered a 3 to 5 minute, videotaped speech. Speeches were recorded using a Polaroid DVG-720 HD digital video recorder. Participants were given 20 minutes to read a prepared speech and

make notes as needed, but they were not allowed to have the written speech in its entirety while delivering the speech. Speeches were on various topics such as giving blood, the importance of voting, tattoos, Alcatraz, and cyberbullying to prevent giving an advantage to participants who had unique knowledge on one subject. Baseline phase speeches were recorded in the classroom with only the researcher present. No in vivo audience was used to reduce exposure effects as much as possible. The treatment was staggered in groups of two to reduce exposure effects as well. The baseline phase was continued until there was a stable baseline consisting of three data points within a 10% range.

In the treatment phase, a six to seven minute speech was recorded, and speech dysfluencies were edited out using the program CyberLink PowerDirector, a program that is \$99 to purchase. An interested-looking audience was edited in twice throughout the speech, and an audience applauding was edited in at the end of the speech. The goal of the editing was to make the speech look successful. The participants then watched the tape of the successful speech one to two times per week. During these sessions, they also gave small speeches identical to the baseline procedures to gather data during treatment. At least one day was required between sessions, so the sessions were distributed throughout the week. A follow-up session also identical to the baseline phase was conducted two weeks after treatment ended to determine if maintenance had been established.

Additionally, a generalization probe with an in vivo audience was completed before and after treatment to ensure the treatment process with only the researcher present generalized to an in vivo audience setting. An in vivo audience was not utilized

for all sessions to minimize exposure effects, so generalization in front of an actual audience needed to be demonstrated.

Results

VSM did not appear to reduce the subjective perception of public speaking anxiety as there was not a robust change in participant SUDS scores from baseline to treatment phase (see Figure 1). However, generalization probes with an in vivo audience indicate that any effects from the treatment did generalize to speaking in the presence of an audience. These effects were also maintained at a two-week follow-up. The absence of a robust decrease between baseline and treatment phases suggests that the modest decrease in anxiety was likely due to exposure effects and not VSM. A SUDS rating was not available for participant 1's first session.

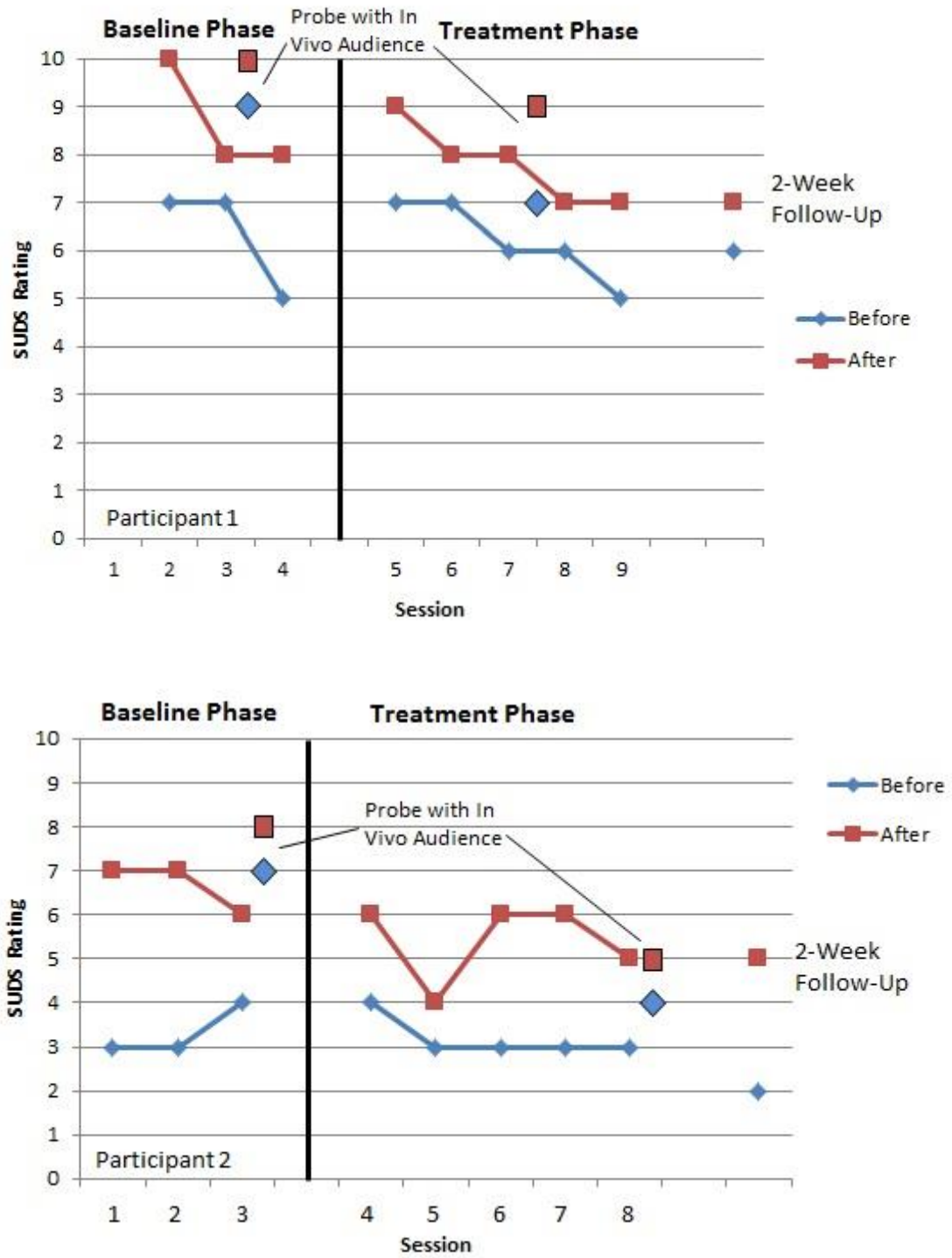


Figure 1. SUDS ratings for each participant before and after giving a speech.

VSM did reduce behaviors indicative of anxiety during public speaking in participant 2 whose public speaking anxiety was moderate during baseline. However, VSM did not produce robust changes in behaviors indicative of anxiety during public speaking in the participant 2, who had more severe speech anxiety (see Figure 2). This result may be due to the difficulty of producing a video that demonstrates excellent public speaking ability when the individual has so few instances of public speaking behavior absent of anxiety. The participant for whom VSM did not reduce behaviors indicative of anxiety very rarely looked at the camera, resulting in anxiety-indicative behaviors in almost every interval.

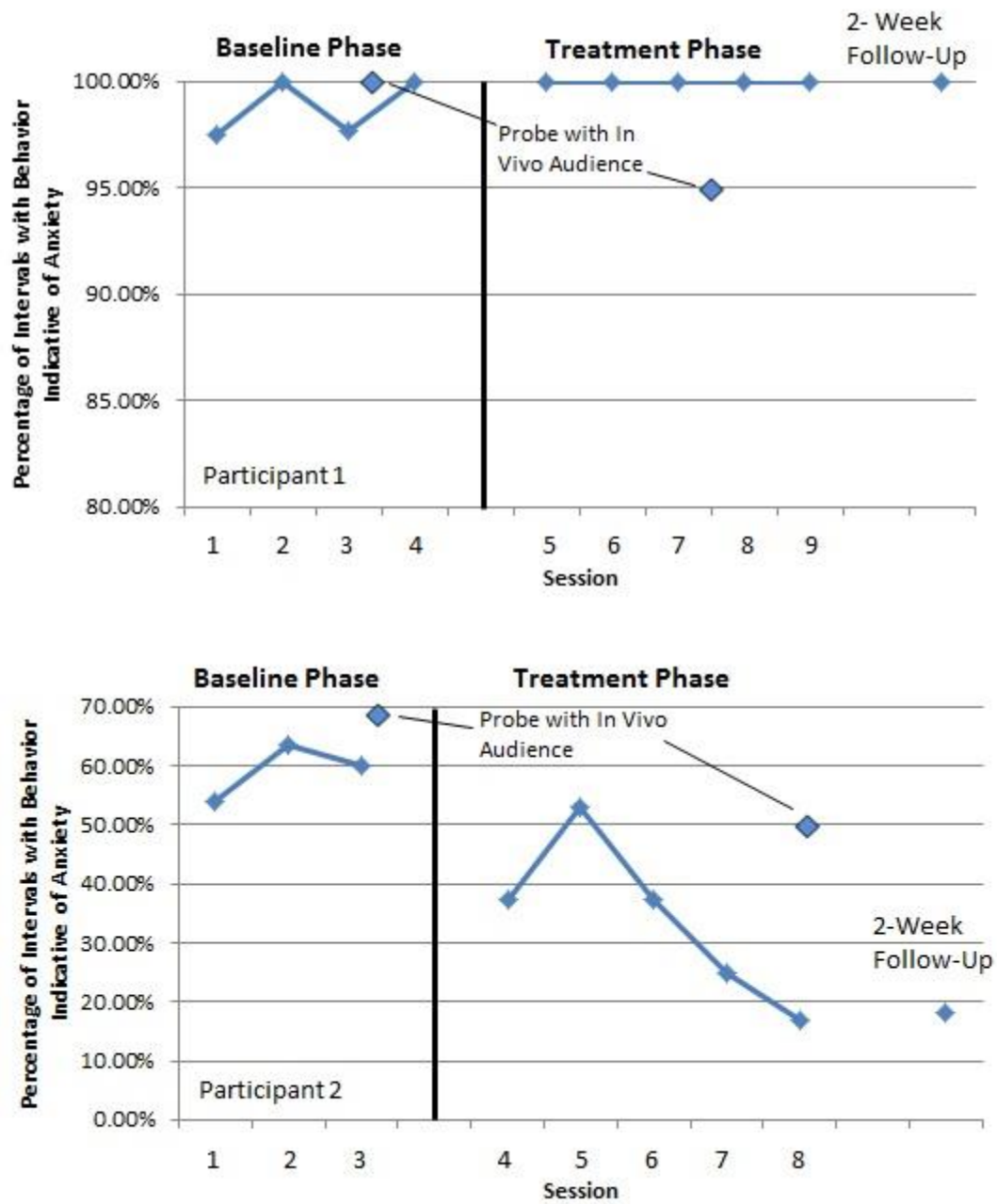


Figure 2. Direct observation of behaviors indicative of anxiety for both participants.

Participants completed the PRCS prior to treatment and after treatment.

Participant 2’s score decreased from 26 before treatment to 22 after treatment, and

Participant 1’s score decreased from 30 before treatment to 28 after treatment. However,

a dependent samples t-test indicated that there was not a significant difference in PRCS scores pre- and post-treatment ($t(1) = 3, p = .21$).

Neither participant indicated that any improvement was due to the video self-modeling on the satisfaction survey. Rather, they both indicated that any improvement they had was likely due to exposure effects. Although I had hypothesized that VSM may be a treatment for public speaking anxiety that limited the amount of individuals' distress during treatment, this theory was proven false because both participants endorsed that it was distressing to watch their VSM videos. Though there was limited improvement in each individual's speech anxiety, both participants indicated that the treatment was helpful, they felt more comfortable speaking in public, and they were satisfied with the treatment process and outcome and would recommend the treatment to a friend. However, one participant indicated that her public speaking anxiety had not been reduced in the process.

Both participants also critiqued their performance in the video self-modeling videos despite their anxious behaviors edited from the video, which suggests that VSM may not be appropriate for behaviors related to social phobia because individuals with these behaviors are often more self-conscious and self-critical than those without symptoms of social anxiety (Heinrichs & Hofman, 2001). For example, one participant noted that while her voice did not shake as much as she thought it did, she noticed "fidgeting habits" of which she was not previously aware.

Discussion

This study had several limitations. Only two participants enrolled in the study, which is not ideal for a multiple baseline design because it indicates less experimental

control. Any replication of this study should include more than two participants to demonstrate greater experimental control. Second, only a two-week follow-up was implemented due to time constraints. A longer follow-up period would have demonstrated longer lasting effects from treatment. There was also low interobserver agreement for the direct observation measurement, which indicates that the assessment is not reliable and calls the results of the assessment into question. More specific operational definitions and more rigorous training for the second coder may have improved interrater reliability. For example, stammering could have been more specifically defined, and training could have included reliability checks to ensure coding was implemented properly. Finally, there was no way to completely eliminate exposure effects, making it difficult to surmise if improvements were due to VSM or exposure. Future research may include comparing VSM to exposure therapy to determine if VSM has any additional treatment effects when compared to exposure therapy.

VSM alone does not appear to be a sufficient treatment for public speaking anxiety, especially severe public speaking anxiety as editing together a coherent video free from behaviors indicative of anxiety is very difficult. Although one participant improved in the exhibition of behaviors indicative of anxiety while giving a speech, neither participant demonstrated a robust decrease in their subjective experience of anxiety after VSM was implemented as indicated by their SUDS ratings and PRCS scores. Low interobserver agreement of behaviors indicative of speech anxiety indicates that this measurement may not be reliable and calls the results into question. The small decrease shown in the SUDS ratings is likely due to exposure effects rather than VSM, and this theory is supported by the fact that both participants indicated their

improvements were due to exposure rather than watching themselves successfully give a speech. Additionally, VSM may not be appropriate for public speaking anxiety because of speech anxiety's relation to social phobia. Socially anxious individuals are more self-conscious and self-critical than those who are not socially anxious, so watching a video of themselves complete a task that elicits anxiety may actually make socially phobic individuals more anxious because they are more likely to critique themselves even with anxious mannerisms edited out of the video (Heinrichs & Hofman, 2001). The satisfaction survey supports this theory as both participants critiqued their own videos despite behaviors indicative of anxiety being edited out and felt distress when watching the VSM video.

Future research with VSM and public speaking anxiety should include a comparison to exposure therapy because of exposure effects inherent in the VSM process. Another option for future research regarding exposure effects could include a group design rather than a single subject design. A group design would only necessitate measurement before and after treatment rather than throughout treatment, reducing exposure effects. A different method of treatment delivery (e.g., allowing participants to view videos on their own time or putting videos on a mobile device) may produce better results because participants could observe the videos at their own leisure and more frequently. Future researchers may also want to examine using VSM as a supplementary treatment. The distressing nature of watching the videos indicates that VSM may serve as a type of exposure and could be used as a segue into in vivo exposure therapy for individuals with severe public speaking anxiety or when attrition is a concern. Clinically, experts in speech skills training may find VSM helpful in aiding the education process,

and future research could explore the additive effects of including psychoeducation and speech skills training with video self-modeling.

Appendix

I would like to better understand your feelings about the treatment. Your responses will be kept confidential, so please answer as truthfully as possible. Please answer the following questions with true (T) or false (F).

1. The treatment was helpful.	T / F
2. My public speaking anxiety has been reduced.	T / F
3. I feel more comfortable speaking in public.	T / F
4. The treatment was a waste of time.	T / F
5. I am satisfied with the treatment process.	T / F
6. I am satisfied with the treatment outcome.	T / F
7. I would recommend this treatment to a friend.	T / F
8. The gains I made in treatment were mostly due to video self-modeling.	T / F
9. The gains I made in treatment were mostly due to exposure (giving speeches over and over).	T / F
10. It was distressing to watch myself give a speech.	T / F

11. Is there anything else you have done during your time in treatment that has helped with your public speaking anxiety?

12. Please describe what it was like to watch yourself give a speech.

References

- Al-Kubaisy, T., Marks, I. M., Logsdail, S., & Marks, M. P. (1992). Role of exposure homework in phobia reduction: A controlled study. *Behavior Therapy, 23*, 599-621.
- Bandura, A. (1969). *Principles of behavior modification*. New York: Holt, Rinehart and Winston.
- Clark, D. M., Ehlers, A., Hackmann, A., McManus, F., Fennell, M., Grey, N., . . . Wild, J. (2006). Cognitive therapy versus exposure and applied relaxation in social phobia: A randomized controlled trial. *Journal of Consulting and Clinical Psychology, 74*, 568-578. doi:10.1037/0022-006X.74.3.568
- Daly, J. A. (1978). The assessment of social-communicative anxiety via self-reports: A comparison of measures. *Communication Monographs, 45*, 204-218.
- Diagnostic and statistical manual of mental disorders: DSM-IV-TR. (4th ed.). (2000). Washington, DC: American Psychiatric Association.
- Dowrick, P. W., & Jesdale, D. C. (1990). Effets de la retransmission vidéo structurée sur lémotion: Implications thérapeutiques. *Bulletin De Psychologie, 43*, 512-517.
- Franks, I. M., Maile, L. J., & Dowrick, P. W. (1991). *The use of video in sport skill acquisition*. Oxford, England: John Wiley & Sons, Oxford.
- Gelbar, N. W., Anderson, C., McCarthy, S., & Buggey, T. (2012). Video self-modeling as an intervention strategy for individuals with autism spectrum disorders. *Psychology in the Schools, 49*, 15-22. doi:10.1002/pits.20628

- Heinrichs, N., & Hofman, S. G. (2001). Information processing in social phobia: A critical review. *Clinical Psychology Review, 21*, 751-770.
doi:[http://dx.doi.org/10.1016/S0272-7358\(00\)00067-2](http://dx.doi.org/10.1016/S0272-7358(00)00067-2)
- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Merikangas, K. R., & Walters, E. E. (2005). Lifetime prevalence and age-of-onset distributions of DSM-IV disorders in the national comorbidity survey replication. *Archives of General Psychiatry, 62*, 593-602. doi: <http://dx.doi.org/10.1001/archpsyc.62.6.593>
- Liebowitz, M. R. (1999). Update on the diagnosis and treatment of social anxiety disorder. *Journal of Clinical Psychiatry 60*, 22-26.
- Magee, L., Erwin, B. A., & Heimberg, R. G. (2009). In Antony M. M., Stein M. B. (Eds.), *Psychological treatment of social anxiety disorder and specific phobia*. New York, NY, US: Oxford University Press, New York, NY.
- Paul, G. L. (1966). *Insight vs. desensitization in psychotherapy. An experiment in anxiety reduction*. Stanford University Press.
- Phillips, G. C., Jones, G. E., Rieger, E. J., & Snell, J. B. (1997). Normative data for the personal report of confidence as a speaker. *Journal of Anxiety Disorders, 11*, 215-220. doi:[10.1016/S0887-6185\(97\)00007-8](http://dx.doi.org/10.1016/S0887-6185(97)00007-8)
- Rickards-Schlichting, K., Kehle, T. J., & Bray, M. A. (2004). A self-modeling intervention for high school students with public speaking anxiety. *Journal of Applied School Psychology, 20*, 47-60. doi:[10.1300/J370v20n02_04](http://dx.doi.org/10.1300/J370v20n02_04)

Safir, M. P., Wallach, H. S., & Bar-Zvi, M. (2012). Virtual reality cognitive-behavior therapy for public speaking anxiety: One-year follow-up. *Behavior Modification*, 36(2), 235-246. doi:10.1177/0145445511429999

Tanner, B. A. (2012). Validity of global physical and emotional SUDS. *Applied Psychophysiology and Biofeedback*, 37(1), 31-34.

doi:<http://dx.doi.org/10.1007/s10484-011-9174-x>

Worthington, E. L. (1984). Speech and coping skills training and paradox as treatment for college students anxious about public speaking. *Perceptual and Motor Skills*, 59(2), 394-394. doi: <http://dx.doi.org/10.2466/pms.1984.59.2.394>