The Role of Videotaped Feedback in the Instruction of Public Speaking: A Quantitative Synthesis of Published Empirical Research

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This article summarizes published experimental studies dealing with the use of videotaping to provide feedback to students in public speaking courses. Meta-analytic procedures were used to summarize twelve published studies. Results of the analysis indicate that the use of videotaping to provide feedback to students in public speaking courses results in better content of student speeches, greater acquisition of public speaking skills, better performance on objective tests, and more positive attitudes toward the course in public speaking. In addition to these positive effects, no statistically significant increase in anxiety is experienced by students when video technology is utilized in the classroom to provide feedback to students in public speaking courses.

For almost three decades, videotaped feedback has been utilized in basic courses in public speaking as an instructional aid. The camera’s ability to preserve the nonverbal and verbal elements of students’ speaking performances for subsequent review and analysis has proven to be a powerful pedagogical tool. The trends toward educational technology and distance learning combined with falling costs have made this technology particularly accessible to basic courses across the country. The use of videotaped feedback in the instruction of public speaking has become a permanent feature of the basic course.

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Surprisingly, empirical research demonstrating the effectiveness of the videotaping for the purposes to which it is being routinely applied has not kept pace with the integration of the camera into public speaking courses. Issues of interest to researchers studying the use of videotaped feedback in the instruction of public speaking have included the effectiveness of using more than one channel at a time (Adams, 1973; Diehl, Breen, & Larson, 1970; Franck, 1980; Hirschfeld, 1968); the accuracy of different channels compared to each other (Adams, 1973; Mulac, 1974); the effects of videotaping on students' speaking skills and perceptions (Bradley, 1970; Diehl et. al., 1970; Dieker, Crane, & Brown, 1971; Mulac, 1974; Roberts, 1972); concern that videotaping may elevate feelings of anxiety beyond acceptable levels (Bush, Bittner & Brooks, 1972; Lake & Adams, 1984) and the conditions that contribute to or detract from the effectiveness of videotaping speeches (Bush, Bittner, & Brooks, 1972; Diehl et. al., 1970; Franck, 1980; Hirschfeld, 1968; McCroskey & Lashbrook, 1970; Porter & King, 1972; Rhodes, 1975).

METHOD

Meta-analysis is the process of gathering quantitative literature on a topic and determining an average effect size across a group of studies. By taking the results contained in each research report and converting them to a common metric (in this case a correlation coefficient) an average effect size for the entire population can be calculated. After an average correlation is computed, the sample of correlations contributing to the overall average can be tested to determine whether the observed effects are homogeneous. This process helps resolve statistical inconsistencies and pools separate populations to yield a larger and more reliable N. For example, Bradley (1970) did not detect any significant improvement in speaking skill among those who viewed videotapes of their speaking performances. Other researchers have suggested that speaking skills are enhanced (Henderson, 1964; Mulac, 1974). A greater degree of certainty and consistency can be achieved by pooling all of the available data in to an average correlation.

Literature Search

Manuscripts examining the use of video technology in the instruction of public speaking were gathered. Computer-based retrieval systems were searched including ERIC, Psychological Abstracts, Sociological Abstracts and Communication Index. Manual searches were conducted of the Education Index, Communication Abstracts and the Index to Journals in Communication Studies. All of the manuscripts gathered had their reference sections searched for additional manuscripts. The only data-base of unpublished manuscripts electronically searched was ERIC. No theses were included in the present analysis.

Criteria for Inclusion

To be included in the analysis, a manuscript had to meet the following four criteria: (1) the manuscript had to examine some aspect of the application of video technology for the purpose of teaching public speaking; (2) the manuscript had to contain a quantitative analysis of the effect of video technology had on one or more dependent measures (3) the manuscripts had to be accessible to the authors; and (4) the manuscript had to contain enough information to permit conversion of the results to a common metric for comparison. These four criteria are commonly used in the selection of manuscripts for meta-analytic comparison. The 12 manuscripts that met the criteria for inclusion are listed in Table 1.
TABLE 1
Manuscripts Used in the Analysis

<table>
<thead>
<tr>
<th>Author(s)</th>
<th>Year</th>
<th>N</th>
<th>Students</th>
<th>Dependent Variable(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Adams</td>
<td>1973</td>
<td>32</td>
<td>University</td>
<td>Accuracy of communication</td>
</tr>
<tr>
<td>2. Bradley</td>
<td>1970</td>
<td>124</td>
<td>University</td>
<td>Effectiveness</td>
</tr>
<tr>
<td>4. Deihl, Breen &amp; Larson</td>
<td>1970</td>
<td>110</td>
<td>University</td>
<td>Skill</td>
</tr>
<tr>
<td>5. Dieker, Crane &amp; Brown</td>
<td>1971</td>
<td>113</td>
<td>University</td>
<td>Self-concept</td>
</tr>
<tr>
<td>6. Goldhaber &amp; Kline</td>
<td>1972</td>
<td>100</td>
<td>University</td>
<td>Attendance &amp; attitudes</td>
</tr>
<tr>
<td>7. Hirschfield</td>
<td>1969</td>
<td>100</td>
<td>University</td>
<td>Skill, anxiety &amp; attitudes</td>
</tr>
<tr>
<td>8. Lake &amp; Adams</td>
<td>1984</td>
<td>88</td>
<td>High School</td>
<td>Anxiety, exhibitionism &amp; reticence</td>
</tr>
<tr>
<td>9. McCroskey &amp; Lashbrook</td>
<td>1970</td>
<td>100</td>
<td>University</td>
<td>Attitudes &amp; evaluations</td>
</tr>
<tr>
<td>10. Miles</td>
<td>1981</td>
<td>60</td>
<td>University</td>
<td>Focus of self-critique</td>
</tr>
<tr>
<td>11. Mulac</td>
<td>1974</td>
<td>102</td>
<td>University</td>
<td>Skill acquisition</td>
</tr>
<tr>
<td>12. Porter &amp; King</td>
<td>1972</td>
<td>71</td>
<td>University</td>
<td>Skill</td>
</tr>
</tbody>
</table>

Coding Scheme

Each study was coded for (1) year of study, (2) type of subject (college or high school student), (3) number of subjects and (4) type of dependent measure. Dependent measures included accuracy of recall, speech content, performance on objective tests and attitudes regarding instruction. (see Table 1).

Statistical Analysis

Each experiment produced an effect size for the analysis. The metric used for this review was the correlation coefficient. Correlations were chosen because they are easily interpretable (Rosenthal, 1985) and because most manuscripts originally used correlations. This means any potential for loss of information when converting data is minimized by reducing the number of conversions required.

An average correlation was estimated (weighing for sample size) using standard meta-analytic techniques (Hedges & Olkin, 1986; Hunter & Schmidt, 1990). A test of homogeneity was performed to determine whether or not the variability observed in the correlations was due to random sampling error or the existence of some moderator variable. This test used the Hedges and Olkin (1986) chi-square test for homogeneity that has been found to be acceptable in Monte Carlo estimates of Type I error (Spector & Levine, 1987).

If the chi-square is insignificant, then the results can be considered homogeneous. The chi-square measures the amount of error relative to that expected by sampling error. A significant chi-square indicates that the amount of error is large, larger than would be expected due to random sampling error. Too much error indicates that the average correlation is an estimate of an average based on a sample of correlations not representing a single distribution. From a meta-analytical perspective, this means that a moderator variable exists preventing a simply summary of the data.

RESULTS

Results indicate that the use of videotaped feedback in the instruction of public
speaking improves skill acquisition (average $r = .259$), speech content (average $r = .085$), performance on objective tests (average $r = .207$) and results in more favorable attitudes towards the course (average $r = .226$), and better recall of the actual speech (average $r = .781$). Although anxiety increases slightly in the presence of a camera, the increase is statistically insignificant and so slight as to be meaningless (average $r = -.006$). Results are presented in Table 2.

**TABLE 2**

<table>
<thead>
<tr>
<th></th>
<th>Recall</th>
<th>Content</th>
<th>Skills</th>
<th>Anxiety</th>
<th>Testing</th>
<th>Attitudes</th>
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</thead>
<tbody>
<tr>
<td>$k$</td>
<td>1</td>
<td>3</td>
<td>8</td>
<td>4</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>$N$</td>
<td>32</td>
<td>280</td>
<td>657</td>
<td>277</td>
<td>154</td>
<td>154</td>
</tr>
<tr>
<td>average $r$</td>
<td>.781</td>
<td>.085</td>
<td>.259</td>
<td>-.006</td>
<td>.207</td>
<td>.226</td>
</tr>
<tr>
<td>$X^2$</td>
<td>2.90</td>
<td>24.968</td>
<td>3.95</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**DISCUSSION**

The results of this analysis support the use of video technology as an instructional tool to provide feedback to students in public speaking courses. Three findings are particularly noteworthy. First, the use of videotaped feedback results in greater skill acquisition. Students, by virtue of being able to see and hear their own speaking performances and to analyze them at a time and place removed from the actual communication event, are better able to integrate fundamental speaking skills into their own repertoires. Second, the use of videotaped feedback results in more positive attitudes on the part of students towards the basic course in public speaking. In short, students enjoy and find valuable the experience of viewing themselves on videotape. Third, the data would suggest that the presence of the camera in the classroom does not create any statistically significant negative effects for the speaker. An average $r$ of -.006 is so small as to be meaningless for instructional purposes. Based on the present findings, use of videotaped feedback for instructional purposes in the basic course in public speaking is justified.

The results of this analysis must be interpreted with some degree of caution. Meta-analysis, while it offers an improvement over traditional box score methods of literature summaries, has several limitations. First, the summary is only as valid as the available literature. If the individual studies analyzed contain a particular flaw, then the summary of the studies will similarly suffer from this flaw. Second, sampling error is reduced, not eliminated, when using meta-analysis. This is a particular problem when some conditions in the analysis contain relatively few studies and/or subjects. This means that portions of the conclusions could substantially change as a much larger data base becomes available. Third, unpublished experimental research is not represented in this particular meta-analysis. Finally, although anecdotal evidence suggests that the integration of videotaping as a pedagogical tool in the basic course is extensive, no systematic survey of basic courses to test this question has been conducted. A national survey of basic courses to assess the extent and use of video technology for the purposes of teaching public speaking is warranted.

Overall, incorporating video feedback in public speaking is an effective pedagogical strategy and should be encouraged. The results of this analysis provide empirical support for attempts to acquire and integrate this technology in the classroom.
REFERENCES


