Increasing Audience Participation in Seminars

Linda J. Parrott
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INCREASING AUDIENCE PARTICIPATION IN SEMINARS

by

Linda J. Parrott

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Degree of Master of Arts

Western Michigan University
Kalamazoo, Michigan
April 1979

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ACKNOWLEDGEMENTS

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Linda J. Parrott
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WESTERN MICHIGAN UNIVERSITY, M.A., 1979
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INTRODUCTION

Listening occupies a considerable portion of students' and others' educational activity and the development of effective listening skills would therefore seem to be an important educational objective. Unfortunately, listening is not possible to modify directly because it is a form of covert behavior, unobservable to observation. As a result, effective listening skills are not usually formally taught.

Nonetheless, students do learn to listen — some better than others — because the consequences of their observable reactions to auditory stimuli indirectly differentially reinforce effective listening. For example, being able to repeat what one has heard, or do as one is told, is reinforced; while not being able to do so is punished. Further, these overt responses are sometimes taken as evidence of "having listened", while their failure to occur is evidence of "not having listened". These observations suggest than an acceptable strategy for teaching listening would involve arranging contingencies to generate and maintain overt behaviors indicative of effective listening.

The specific purpose of a given speaker-listener interaction determines which of these overt behaviors are suitable indicators, and further, whether it is appropriate for the listener simply to be able to repeat what the speaker says or make "original" contributions, such as asking questions or making comments. During a lecture, for example, writing facilitates later studying and is
therefore an appropriate form of learner activity. Also, it is important that, upon assessment, the listener's behavior closely match that of the speaker -- this being the principal educational objective of such interactions. On the other hand, vocalizations, in the form of asking questions or making comments, may be encouraged to some extent but are not typically emphasized because too frequent learner vocal remarks interrupt lectures.

Another set of contingencies prevails in a seminar setting. Seminar formats vary; however, a typical arrangement involves each student, in turn, giving a more or less formal presentation before an audience consisting of the other students. Under such circumstances, listener vocal remarks are emphasized as listeners are expected to contribute to the speaker's education by making comments and asking questions, rather than to prepare themselves for later assessment by taking notes. Here, an educational objective for audience members is the development of critical listening skills.

Critical listening involves understanding and consciousness. Understanding means to be able to repeat what someone says, to be able to respond appropriately to what someone says, or to be able to say the same things under similar circumstances (Skinner, 1974). In the present context consciousness means to be able to state that we understand, or fail to understand, in any of the three ways mentioned above. Critical listening, then, would be indicated by acting to produce understanding. Further, we may produce understanding either for ourselves or others, when we
are aware of its absence on our part or theirs. A request for clarification or repetition exemplifies such action. Another example would be challenging the speaker's analysis in favor of our own when we have a tendency to say something other than what the speaker says. In this latter case, the challenge may produce greater understanding for the speaker rather than for the listener. Critical listening could also be indicated by reacting appropriately when we are aware that we do understand. We may make comments or give suggestions to the speaker, for example. Finally, evidence of critical listening may be seen in our later actions -- when we say or do things as the speaker would have done under similar circumstances for the same reasons.

Unfortunately, seminars fall short of their objectives in developing these skills. Audience members rarely participate to an extent equal to their opportunity to do so. As a result, almost all of the feedback the student speaker receives comes from the teacher, not the student's peers. The speaker's education may not suffer greatly under these circumstances because the teacher's expertise may compensate for the diversity of comments lost when others fail to participate. Instead, it is the audience who fails to be educated adequately if teachers monopolize seminar discussions. This is because overt indications of critical listening must occur in order for teachers to effectively shape these skills. In short, if audience members are to derive maximal educational benefits from seminars, they must also contribute to the speaker's education by making
comments and asking questions. Only then is a teacher able to alter the repertoires of both speakers and listeners.

The educational value of seminars might also be improved if records of these interactions were kept for later reference. Speakers, for example, may wish to revise their presentations based on the feedback received during seminars and these revisions would be greatly facilitated if records were available. Note taking might accomplish this objective; however, speakers are not usually in a position to take notes — they may be standing or otherwise prevented from writing. Listener's notes, on the other hand, would be quite useful to speakers if these contained questions and suggestions. Unfortunately, there is no reason for listeners to take note of things they wish to say if they may simply say them. Hence, the listener's critical reactions are more likely to occur vocally. Furthermore, this is exactly what teachers encourage because, in contrast to writing, the occurrence and form of vocal behavior are immediately accessible to teachers -- an important consideration for effective instruction. Moreover, even if listeners did take notes and these were potentially useful to speakers, arrangements are not typically made for speakers to receive these notes.

Certain kinds of note taking might also have benefits for listeners. For example, when a speaker's topic is similar or in some way relevant to a listener's other activities, the presentation may give rise to useful suggestions for the listener to implement. Taking note of these suggestions would increase
the likelihood of such follow-up actions occurring, thereby benefitting the note taker. Many listeners are unaccustomed to taking notes of this sort, however. Most often notes are taken for the purpose of later studying and these notes consist primarily of transcription. As a result of this history, if note taking is encouraged and a small number of useful notes are made, they are likely to be embedded in pages of useless transcription. Useful suggestions are difficult to retrieve from such records and this difficulty may prevent their serving as effective cues for follow-up action.

Furthermore, taking notes specifying follow-up actions is not likely to be maintained unless these actions do occur and are then reinforced. This is the case because this form of note taking may be indirectly reinforced by the consequences responsible for the maintenance of these actions. Explicit consequences are rarely engineered to ensure the occurrence of follow-up action based on seminar notes, however, and as a result, neither notes nor actions tend to occur.

In summary, while seminars seem particularly well-suited to the task of teaching critical listening, these skills may not be developed adequately in standard seminar arrangements as a result of ineffective contingency management.

Contingencies might be arranged to solve the problems of insufficient vocal and written audience participation encountered in seminars, however. For example, if the audience is prevented from interrupting the speaker until the end of the presentation,
taking notes of comments throughout would facilitate an effective vocal interaction during the discussion period. The listener's comments and questions would then be available in both written and vocal form. Notes of this sort might be of considerable utility to presenters and arrangements could be made to allow presenters access to them. Similarly, consequences could be arranged for taking follow-up action on notes specifying such action in order to maintain note taking useful to the writer as well. The educational value of seminars, for both speakers and listeners, might be greatly improved under these circumstances.

The present study attempted to increase the rates of particular kinds of note taking and vocal remarks -- those indicative of critical listening -- in a graduate research seminar audience. A treatment package, consisting of two components, was used: a special note form, and a post-presentation round-table discussion. In addition, points towards letters of recommendation were available, or on an optional basis, for following up on actions specified in seminar notes.
METHOD

Subjects

The subjects were eleven graduate students in the Applied Behavior Analysis program at Western Michigan University. They were all doing their own graduate research throughout the study, four at the doctoral level, and seven at the master's level. Five of the subjects (including all four of the doctoral students) had participated in a similar study the previous semester. These five subjects are called "experienced" in the text, the other six "inexperienced". They all gave their informed consent prior to implementation.

Setting

The research took place in a graduate research seminar. All students received course credit for participating in the seminar. At each weekly meeting, one student reported on his or her research project before an audience consisting of the other ten students and their faculty advisor. Each student reported only once during the study, and on two occasions, persons other than subjects reported. The mean session duration was 69 minutes, with a range of 20 to 90 minutes. Session time included both the presentation and the discussion period. Thirteen seminars occurred in all over a period of fourteen weeks.
Dependent Measures

The dependent measures were: the rate of vocal comments and questions in the seminar, the rate of note taking in the seminar, and the number of times audience members took follow-up action, based on their notes. (See Table 1.)

Vocal behavior

An instance of vocal behavior was defined as a continuous vocal emission. Interruptions such as "another point", "secondly", etc., or vocal behavior on the part of another person terminated one instance and began another. (See Appendix A for further detail.)

Writing behavior

Two general classes of writing were identified: entries for the self and entries for the presenter. Entries for the self were defined as notes pertaining to the activities of the writer, but not the presenter (see Appendix B). Entries for the presenter were defined as notes having benefits for the presenter (see Appendix C). Entries for the self and for the presenter were distinguished by their topographies, during the baseline condition, and by their topographies as well as the note form section in which they appeared, during the experimental conditions.

The sources of entries -- roughly a measure of their originality -- provided the basis for a second classification of entries.
TABLE I : Dependent Measures
TABLE 1

Dependent Variables

I  Writing
   A. Entries for Self
      1. original (self-as-source)
         a. specifying follow-up actions
         b. not specifying follow-up actions
      2. unoriginal (others-as-source)
         a. specifying follow-up actions
         b. not specifying follow-up actions
   B. Entries for Presenter
      1. original (self-as-source)
         a. substantive
         b. claritive
         c. confirmatory
         d. delivery related
      2. unoriginal (others-as-source)
         a. substantive
         b. claritive
         c. confirmatory
         d. delivery related

II  Vocalizations
   A. Uninterrupted vocal responses
   B. Vocal units
TABLE 1 (continued)

1. substantive
2. claritive
3. confirmatory
4. delivery-related

III Follow-Up Action

A. Verbal action
B. Non-verbal action
The two sources were: the self, i.e., original entries; and others, i.e., unoriginal entries. Entries were identified by their topographies, during the baseline, and by their topographies as well as by the source codes assigned to entries by subjects, during the experimental conditions. (See Appendix D for further detail.)

Entries for the presenter were further subdivided into four classes based on inferences concerning their controlling variables and stimulus functions in order to assess the educational value of this form of participation for both presenters and audience members. This analysis and some examples of each class are available in Appendix E.

Similarly, entries for the self were subdivided on the basis of whether or not they specified follow-up actions to be taken. Two classes of entries for the self were distinguished: those which enjoined the writer to take some form of follow-up action; and those that did not (see Appendix F).

Follow-up action

Follow-up action was defined as instances of reading entries for the self followed by taking action with respect to them. Verbal action was defined as incorporating the substance of an entry into research reports, formal research proposals, or any other formal text such as a procedures manual or class assignment. Actions of this sort were identified by their products. Nonverbal action was defined as implementing the substance of an entry in ongoing research projects or any other activity of a
professional or academic sort. Actions of this sort were identified by their products or the statement of a witness.

Experimental Procedures

The study consisted of three phases: (a) Baseline; (b) Note Form and Round-table Discussion; and (c) Note Form, Round-table Discussion, and Optional Contract for Follow-up Action. In all phases the experimenter recorded instances of vocal behavior and audio-recorded most sessions.

Baseline

Audience members could engage in vocal interactions with the presenter any time throughout the session. Note-taking was neither encouraged or discouraged. Notes were collected at the end of each session and returned within two days. The experimenter met with the subjects after the last baseline session to determine if any instances of follow-up had occurred. Instructions given to subjects at that time are available in Appendix G.

Note form and round table

The note form was an 8-1/2" x 11" sheet of paper partitioned into 24 spaces in which to make entries and divided into two sections: entries for self, and entries for presenter. (See Figure 1.) The source of an entry was recorded in the "source" box; the context of follow-up action was recorded in the box labeled "code", and the approximate date upon which such action
FIGURE 1: Sample Note Form. (The entries shown on the form are included for illustrative purposes only.)
would be taken was recorded in the box marked "action date".

In this condition, all writing during the session was restricted to the note form. Students recorded the sources of entries as they made them; follow-up activity areas and action dates were recorded at the end of the session. The experimenter collected the note forms at the end of the session, returning the "entries for self" sections to their respective writers and giving the "entries for presenter" sections to the presenter within two days.

Audience vocal remarks were restricted to a discussion period following the formal presentation with the exception of requests for clarification. Each student had an opportunity to interact vocally with the presenter, a randomly selected student going first, the others following in turns around the table. A table of random numbers was used to determine which student would go first. The faculty advisor took the last turn, time permitting.

All students completed an evaluation of the seminar format during this condition. Instructions given to students at the outset of the Note Form and Round Table condition are available in Appendix H.

Note form, round table and contract

The procedures in this condition were identical to those of the previous condition, with one exception: students had an opportunity to earn points toward letters of recommendation.
from the faculty advisor (Dillon, Kent & Malott, 1979), contingent on taking action on selected "entries for self" by the dates specified by those entries. "Entries for self" were subject to this contractual agreement if students circled their action dates. However, contracting was always optional; students could contract to take follow-up action on whichever and as many entries as they wished, including none of them. One positive point was available for each follow-up action taken, and one negative point for each action not taken by the specified dates. The experimenter continued to meet with all students to determine whether or not instances of taking follow-up action had occurred, awarding points where applicable. Records of point earning were distributed weekly to each student.

All students completed an evaluation of the seminar format during this condition. Instructions given to the students at the outset of the Note Form, Round Table and Contract condition are available in Appendix I.

Observation and Reliability

The author served as the primary observer, and one student served as a secondary reliability observer. The training of the reliability observer involved reading the definitions of response classes and then discussing them with the primary observer.

Reliability measures were collected on instances of vocal behavior and the classifications of entries, but not on instances of taking follow-up action.
The reliability percentages equalled the number of agreements between the primary and secondary observers' observations divided by the number of agreements plus disagreements between their observations multiplied by 100 (Bijou, Peterson & Ault, 1968).

The reliability percentages for the Baseline condition did not differ appreciably from those obtained for the Intervention conditions, hence the following figures reflect the reliability of observations for all three conditions, combined.

The mean reliability of observations of vocal behavior was 96%. Forty-six percent of the sessions were sampled.

Twenty-five percent of the classifications of writing were sampled. Reliability percentages on writing measures were as follows: entries for self, 89%; entries for presenter, 97%; original entries, 95%; unoriginal entries, 90%; entries specifying follow-up action to be taken, 94%.
RESULTS

Dependent Measures

Writing behavior

When the note forms and round-table discussion were introduced, the rates of writing on most measures -- entries for self, entries for presenter, original entries, and unoriginal entries -- showed increases for both experienced and inexperienced groups. However, these rates for both groups generally decreased when the contract was introduced. The exceptions were unoriginal entries and entries for the self for inexperienced students (those who had not participated in the pilot study); these measures showed gradual decreases across all three conditions. (See Table 2 and Figures 2 and 3.) Individual subjects' data occasionally deviated from these trends, as may be seen in Appendices J, K, L, and M. Appendices E, N, and O show the results of a finer grained analysis of entries for the presenter, based on inferences concerning their contracting variables and stimulus functions.

Vocal behavior

On the other hand, vocal behavior rates did not change appreciably across conditions (see Figure 4). Individual subjects' data are in Appendices P and Q.

Follow-up action

Students could write three kinds of entries for themselves:
TABLE 2: Median Rates and Absolute Numbers Obtained for Writing and Vocalizing Across Conditions for Both Groups
TABLE 2

Median Rates and Absolute Numbers Obtained for Writing and Vocalizing Across Conditions for Both Groups

<table>
<thead>
<tr>
<th>Dependent Measures</th>
<th>Experienced Students</th>
<th>Inexperienced Students</th>
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<tbody>
<tr>
<td></td>
<td>Base-Line</td>
<td>Note Form</td>
</tr>
<tr>
<td>entries for presenter</td>
<td>.05&lt;sup&gt;a&lt;/sup&gt;</td>
<td>.16</td>
</tr>
<tr>
<td></td>
<td>(3.7)</td>
<td>(7.1)</td>
</tr>
<tr>
<td>entries for self</td>
<td>.03</td>
<td>.08</td>
</tr>
<tr>
<td></td>
<td>(2.58)</td>
<td>(2.90)</td>
</tr>
<tr>
<td>original entries</td>
<td>.05</td>
<td>.16</td>
</tr>
<tr>
<td></td>
<td>(4.13)</td>
<td>(8)</td>
</tr>
<tr>
<td>unoriginal entries</td>
<td>.02</td>
<td>.05</td>
</tr>
<tr>
<td></td>
<td>(2.05)</td>
<td>(2.35)</td>
</tr>
<tr>
<td>vocal responses</td>
<td>.12</td>
<td>.14</td>
</tr>
<tr>
<td></td>
<td>(10.65)</td>
<td>(6)</td>
</tr>
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</table>

<sup>a</sup>Median rate of entries/vocal responses per minute.
<sup>b</sup>Median absolute number entries/vocal responses per session.
FIGURE 2: Mean Rate per minute of Entries for Self and Entries for Presenter, across Sessions, for Experienced and Inexperienced Subjects. (Horizontal solid lines represent the median rates of entries for the self and for the presenter in each phase.)
FIGURE 3: Mean Rates per Minute of Original and Unoriginal Entries across Sessions, for Experienced and Inexperienced Subjects. (Self-as-source refers to original entries; others-as-source refers to unoriginal entries. Horizontal lines represent the median rates of original and unoriginal entries in each phase.)
FIGURE 4: Mean Rates per Minute of Instances of Vocal Behavior across Sessions, for Experienced and Inexperienced Subjects. (Horizontal solid lines represent the median rates of vocal behavior in each phase. Arrows indicate the sessions in which time constraints imposed limitations on vocal opportunities.)
literal transcriptions of what the speaker said; original entries that would not serve as cues for follow-up action; and original entries that would serve as such cues. This study was mainly concerned with the latter category.

Original entries serving as cues for follow-up action increased from a low level in Baseline to a moderate level during Note Forms and Round Table condition; however, they decreased to near-baseline level with the introduction of the optional contracts for completing these follow-up actions (see Figure 5).

The actual completion of follow-up action followed a similar pattern, increasing from baseline to the Note Form and Round Table condition, and decreasing, though not as greatly, in the Contract condition (see Figure 5).

Individual students' data occasionally deviated from these trends, as may be seen in Appendices R and S. The arrows in these figures indicate sessions in which students contracted to take follow-up action.

Subjective Evaluations

All subjects completed a questionnaire concerning the seminar format at the end of the sixth and ninth sessions. The results of the evaluations were very similar, and were combined. Each student responded twice making a total of twenty-two respondants. Twenty-two respondants (100%) said they would prefer to present their research when audience members used the note form, as opposed to when they did not.
FIGURE 5: Mean Number of Entries for Self, Entries Specifying
Follow-up Action to be Taken, and Instances of
Taking Follow-up Action, across Conditions for all
Subjects.
MEAN NUMBER ENTRIES AND INSTANCES OF FOLLOW-UP ACTION

- ENTRIES FOR SELF
- ENTRIES SPECIFYING ACTION
- INSTANCES OF ACTION TAKEN

BASELINE  NOTEFORM ROUND TABLE  NOTEFORM ROUND TABLE CONTRACT
Fourteen respondents (64%) said that they felt more pressure to take notes and make comments while using the note form and participating in the round table discussion, then when neither were used, while six respondents (27%) reported that they did not feel more pressure. Two respondents (9%) said they felt no pressure to do either under either condition.

Twelve respondents (55%) said they preferred the round table discussion over unrestricted opportunities to interact vocally prevailing during the Baseline condition. Four (18%) said they had no preference; and six (27%) said they preferred the unrestricted opportunity prevailing during the baseline condition.
DISCUSSION

As far as the writing data are concerned, critical listening seemed to improve when the note forms and round-table discussion were added to the seminar, as the following data suggest: audience members' rates of original entries, both for themselves and for presenters, increased. These changes in audience participation represent a major step toward reaching several educational objectives of the seminar format: increased originality on the part of the audience, and increased utility of audience participation -- for themselves in terms of notes that are more likely to cue practical follow-up actions, and for presenters in providing written feedback on their presentations. Thus these educational benefits of seminars may be improved with relatively minor changes in standard format -- the use of a note form and a post-presentation round-table discussion.

On the other hand, vocal behavior rates did not show similar increases with the introduction of the note form and round-table discussion, and high rates of useful writing behavior were not maintained with the introduction of the contract. But, both of these findings may be artifactual -- the first as a consequence of inadequate response definitions; the second as a product of variations in session length. We will return to a discussion of these problems.

The behavioral effects of specific features of the note form and round-table discussion format were not experimentally isolated;
however, some speculation as to their probable contributions may provide direction for future research. Hence, a conceptual analysis of the seminar format follows.

A Conceptual Analysis of the Seminar Format

Changes in writing as a function of reinforcement for vocalizing

The note form and round-table discussion had two major effects on the writing: a change from primarily taking dictation to writing original entries for both the self and the presenter, and an increase in entries for the presenter. While an increase in original entries for the self cannot be explained by appeal to the reinforcement for vocal behavior, similar entries addressed to the presenter may well be. Thus follows an analysis of the effects on writing as a function of reinforcement for vocalizing.

Vocalizing is more probable than writing when the opportunities to engage in both are equal, as often exists in standard seminar arrangements. There are probably a number of reasons why this is so. First, vocalizing is less effortful than writing. Secondly, social reinforcement and punishment for vocal behavior can be direct and immediate due to the fact that the persons providing these consequences have immediate access to the occurrence and form of this behavior. Writing, on the other hand, is difficult to observe and consequate when only the writer has immediate access to what is written. Finally, should a comment arise that meets one's personal standard of excellence, making such a comment may be automatically
reinforced by the knowledge that one has performed adequately. This reinforcement may be available for both writing and speaking, however it may be enhanced by speaking because then others also know that one has performed adequately. The very low rates of writing obtained during the baseline are in accordance with these analyses.

An additional source of reinforcement for writing becomes available, however, when the opportunity to engage in vocal behavior is restricted until the end of the presentation, as exists in the modified seminar format of the intervention conditions. Note taking permits vocalizations under the control of notes (i.e. reading) to occur and possibly be reinforced during the round-table discussion. As such, taking notes serves as an initial link in a chain terminating in vocal behavior and is presumably reinforced because it does so.

However, not all forms of note taking serve equally well in this capacity. Reading a transcription of the presentation will not be reinforced during the discussion. Rather, only original comments and questions which are addressed to the presenter will be reinforced. That is, only original entries for the presenter constitute functional initial links.

Hence social reinforcement for vocal behavior during the round-table discussion may be responsible for the increases in original entries observed for the presenter.

On the other hand, entries addressed to the self were not subject to indirect reinforcement for vocal behavior during the
round-table discussion. Still, with the introduction of the note form and round-table, dictation was replaced by other kinds of writing. Entries for the self became adaptations of the presentation to the writer's own research project and entries enjoining the writer to take particular follow-up actions. Presumably these changes are partially a function of stimulus properties of the note form, as the following analysis explains.

**Changes in writing as a function of the note form**

Interacting with the note form forces writers to become more aware of certain features of their writing than may be ordinarily the case; and this awareness may be partially responsible for the increases in original entries observed with the introduction of the note form. Normally, note taking occurs for the benefit of the writer, alone, and a speaker as the source of what is written is assumed. In contrast to these more standard note taking circumstances is requiring students to react to the fact of multiple audiences (accomplished by the "entries for self" and "entries for presenter" sections of the note form), and to the source of control for their behavior (by means of the source code box). These requirements force awareness of self and it may be more reinforcing to know oneself as someone who engages in original behavior, as opposed to one who does not. If this is the case, the increases in original entries, observed during the first session of the Note Form and Round-table condition and maintained throughout this condition, may be partially attributable to these properties of the
note form.

The negative contributions of a standard note taking history, in the current situation, are particularly apparent for inexperienced subjects, who show extremely low rates of original entries and entries for the presenter prior to the introduction of the note form. Experienced subjects' rates of these entries were not as low, possibly because the majority of these subjects were doctoral students, but also possibly as a function of their prior experience with the note form. Lending support to this latter interpretation is the fact that one experienced subject modified ordinary notepaper, during the baseline condition, so as to resemble the multiple-audience feature of the note form.

Another feature of the note form may have been partially responsible for the decreases in unoriginal entries observed with its introduction. A partitioned writing space may not be conducive to literal transcription. This is because transcriptive units tend to be large -- more or less continuous -- and these units do not fit well into the small writing spaces provided. Thus the note form may set the occasion for brief, discrete units of behavior -- such as comments or questions.

At no time throughout the experiment were entries for the self of any particular form explicitly reinforced. However, entries specifying follow-up action (self-as-source entries) became the focus of weekly meetings between the experimenter and students during the intervening conditions. Point earning during the Contract condition were also dependent on these entries. This
weekly monitoring and also the point contingencies may be partially responsible for the changes in "entries for self" obtained, and an analysis of their possible contributions follows.

The effects of monitoring follow-up actions and of contracting to take follow-up action on entries for the self

The anticipated effects of the opportunity to earn points toward letters of recommendation, contingent on taking action on selected "entries for self", were: 1) an increase in entries specifying follow-up actions to be taken, and 2) an increase in follow-up actions taken. Unexpectedly, both increased during the Note Form and Round-table condition when they were only monitored, and both decreased when the contract option was introduced. Why did this happen?

They may have increased during the Note Form and Round-table Condition as a function of stimulus control variables. In the first place, the note form favored such entries by disrupting a tendency to take dictation as described above. Secondly, these entries and actions taken became the subject of data collection meetings between students and the experimenter. The ensuing meetings presumably evoked reading of notes and to a lesser extent taking follow-up action with respect to them. While no explicit consequences for taking action were programmed, weak forms of reinforcement and punishment, associated with the experimenter's observation of follow-up action occurring and its failure, may have been operating. These contingencies were sufficient to produce moderate increases in entries specifying action to be taken, but
did not produce substantial increases in action taken.

They may have decreased during the Contract condition as a function of stimulus control variables also — more explicitly as a result of rule-governed behavior. An analysis follows.

The subjects in the present study all had extensive histories of reinforcement for completing tasks by deadlines, a feature of the research supervision system in which they were involved. They had further been indoctrinated as to the virtues of accountability. To make entries constituting opportunities to take follow-up action, and to elect not to be held accountable for taking this action is in direct conflict with this history. These circumstances imply that the contract contingency may not have been functionally optional. If it was not, entries become obligations for more effortful follow-up action, the effect of which may well be to suppress entry-making: the fewer the entries made, the less follow up action is required. Further, more selectivity may be expected of the entries actually made, entries describing excessively effortful activities, or those requiring immediate action being avoided. Declining rates of "entries for self" during the contract condition, thus, may be seen as a product of maintaining an acceptable ratio of entries to follow-up actions.

The implementation of the contract coincided with decreases in the rates of entries for the presenter as well. It is not likely that these findings are attributable to the contract, however, since these entries were not susceptible to the contract contingency: points were not available for taking action on these
entries. Rather, these changes may be an artifact of variance in session length, radically altering rate measures, as described below.

An alternative interpretation of declining rates of entries for the presenter during the Contract condition

Rate measures were used rather than absolute numbers because the sessions varied in length and it was possible that a longer session might give rise to more written and vocal comments than a shorter one. This analysis suggests that the relationship between session length and the number of comments made is linear, which may not be the case.

Both rate and absolute number showed the same general results from the Baseline to the Note Form and Round-table Condition, although rates tended to minimize the differences obtained. However, this was not the case for the Contract condition: absolute numbers showed increases in original entries and entries for the presenter while rates showed decreases. This discrepancy may be traced to differences in session length: Baseline and Note Form and Round-table sessions had an average session length of 55 minutes, while the Contract sessions had an average length of 79 minutes.

It is possible, therefore, to suggest that rate measures obscured what was actually taking place during the Contract condition—that students were performing close to maximally despite declining rates.

Another interpretation of declining rates of useful writing occurring during the Contract condition is that the increases
observed in these behaviors during the Note Form and Round-table condition were largely a function of stimulus control variables, as opposed to reinforcement variables. It is true that explicit contingencies of reinforcement and punishment were never programmed for participatory writing, nor its absence. Rather, social approval and disapproval, naturally available in the situation, were presumed sufficient to maintain writing. However, given the obtained decreases in these behaviors, despite the adequacy of their measurement, it is possible that other more tangible consequences might have been more effective in their maintenance.

A qualitative analysis of vocal behavior

The definition of an instance of vocal comment as an uninterrupted vocal emission gave all vocalizations equal weight without regard to their length, coherence, substance, controlling variables, or other dimensions possibly more indicative of their value from an educational standpoint.

A finer grained analysis of vocal behavior, from session audio-recordings revealed that vocal responses could be categorized readily into four classes. These classes were: 1) requests for clarification, for example, "What did you say the dependent variables were?"; 2) substantive additions or instances of problem solving, such as, "You might consider giving bonus points for good suggestions", or, "Your results are confounded by order effects..."; 3) agreements or confirmatory remarks, for example, "I agree with Terry, bonus points are a good idea"; and 4) general comments related
to the overall performance of the presenter, such as, "Nice job."

Unfortunately, an adequate comparison of these vocal response
class measures across conditions was not possible to make due to
the unavailability of audio-recordings for three of the four
Baseline sessions. Nevertheless, the rates of substantive/problem-
solving units are more than three times as high during the inter­
vention conditions as this rate for the one Baseline session,
suggesting that qualitative differences in vocal responding may not
be reflected in the measure "uninterrupted vocal responses",
shown in Figure 3.

In any case, it is probable that the round-table discussion
did suppress the rates of certain types of vocal responses. Casual
observation revealed that audience members tended to interact more
with one another when opportunities were not restricted (i.e., during
Baseline). These responses were not typically recorded on note­
paper. Conversely, audience members tended to interrupt one another
much less often, with responses becoming larger and more composed,
when vocal behavior was prohibited until the end of the presentation
(requests for clarification excluded), and opportunities were
arranged in turns (i.e., during the intervention conditions). In
addition, these vocal responses typically were also recorded as
"entries for the presenter", at least partially.

Both patterns of vocal responding may be desirable, but
under different circumstances. Sometimes seminars take the form
of lively discussions over familiar issues, without a formal
presentation of these issues. Under these circumstances (where
all members are equally prepared to speak and no one of them has been designated as a principal speaker), rapid spontaneous interchanges among members, as occurred during the Baseline condition, may be quite appropriate. "Taking turns" commenting would not accomplish the objective of "lively discussion", and unrestricted vocal opportunities would be recommended. On the other hand, when seminars involve a formal presentation these rapid interchanges may not be as appropriate. More composed responses, which are additionally available to the presenter as notes, seem more in keeping with the educational objectives of the interaction: to shape critical listening skills, and to provide direction and immediate feedback on the activity of a designated speaker.

Moreover, adding the round-table discussion to the seminar limits the opportunity for vocal comments to however much time remains after the presentation is over. Consequently, when presentations are unusually long, little time remains for discussion and the low rates of vocal behavior obtained may be a function of limited opportunities.

Limitations and possible applications of the note form and round-table procedure

The seminar format described was empirically validated with a relatively small group of graduate students. The size of the group permitted all members to participate as presenters on one occasion and allowed each the opportunity to interact vocally with the presenter at each meeting. Both may be critical to the
results obtained, since audience members had a vested interest in fostering participation, and the reinforcement available for vocal behavior was believed to be critical to improvements in written forms of participation. These factors suggest that the procedure may be useful only with small groups of advanced students. However, larger groups could be accommodated with only minor changes in the validated procedure. Multiple speakers on given occasions or more frequent seminars over a longer period of time would greatly increase the number of persons able to participate as presenters. Further, vocal opportunities for members of a large group could be arranged randomly, not every subject interacting with the presenter on every occasion, without loss of control afforded by the reinforcement available for vocal behavior.

Addresses given at conventions provide examples of large group situations. Individual opportunities to interact with presenters are not normally arranged under these conditions, however some number of audience members usually interact with presenters during discussion periods following formal presentations. Interacting once or twice with presenters, or at least with other audience members, over the course of several addresses may maintain critical listening during conferences. Unfortunately, much of what takes place at conventions is quickly forgotten since critical interactions fail to be recorded for future reference. The note forms used in the present study would seem to have particular utility under these circumstances.

The critical features of one person speaking (or otherwise
behaving) before an audience and delayed opportunities for vocal interaction between them prevail in a number of academic situations quite unlike the seminar, suggesting broader applications of the note form and round-table discussion format. Field experience of student therapists and teachers are examples. In both situations instructors observe student performance, typically without interference, followed by a conference. The note form would facilitate a more specific and useful interaction during the conference, in addition to providing the student with a permanent record of the commentary. Further, the "entries for self" section of the form would allow instructors to take note or more general issues appropriate for classroom discussion and lecture, at a later time.

Finally, effective listening would seem to be a useful repertoire for virtually any literate population. Only those too young (or too old) to read and write adequately would appear to constitute an inappropriate population for the use of the seminar procedure described.

Conclusion

In conclusion, the changes in writing and vocalizing observed in the intervention conditions are believed to be a function of the unique combination of the note form and round-table discussion. This arrangement of controlling variables makes maximal use of the social reinforcement for vocal comments naturally available in the situation. The procedure entails no additional effort or cost, apart from the initial construction and reproduction of a
suitable note form.

On the other hand, follow-up action based on seminar notes may not occur without explicit reinforcement. Also caution must be taken to avoid the suppression of in-session participation when its products become obligations for more effortful follow-up action.

Further research is needed to determine the effectiveness of the procedure with different sized groups under different conditions, and with populations at different levels of achievement. In addition, the specific contributions of the note form features, round-table discussion, and follow-up action contracting in the control of participatory behavior await further study, as these variables were combined in a single treatment package in the present study.
REFERENCES

Bijou, S. W., Peterson, R. F., and Ault, M. H. "A method to integrate descriptive and experimental field studies at the level of data and empirical concepts." *Journal of Applied Behavior Analysis*, I (Summer 1968), 175-191.


APPENDICES
APPENDIX A: Observation of Vocal Behavior
APPENDIX A

Observation of Vocal Behavior

Instances of audience members' vocal behavior were defined as uninterrupted vocal emissions without regard to their duration. (Presenters' vocal responses were not counted.) An interruption terminated one instance and began another. The following rules were observed in recording instances:

1) Vocal behavior on the part of another person, which interrupts a current speaker's vocal response, terminates the current instance and begins a second instance. There is one exception: if another person's vocal behavior takes the form of a brief acknowledgement, such as, "yes", or "I see", etc., and this response does not actually bring the ongoing response of the current speaker to an end, only one instance will be counted. The acknowledgement will not be counted as an instance.

2) Responses such as "a second point", or "another point", etc., in the vocal behavior of the current speaker shall indicate the termination of one instance and the beginning of another instance wherever they occur. Similarly, pauses, during which a current speaker may be reviewing notes, shall indicate the termination of one instance, with the next emission of vocal behavior beginning another instance.

3) Vocal responses such as "I pass", "all my comments have
already been made by others", "I'll stop now so that everyone has a change to speak", etc., shall not be counted as instances.

Examples

Speaker 1: "You'll need two randomized groups." (Counted as one instance.) Pause. "I'll stop now so that everyone will have a change to speak." (Not counted.)

Speaker 2: "Are these going to be tied in anyway to career development interviews or did you drop that in favor of self management projects?" (Counted as one instance.)

Presenter: "Well, I would like to include the career development interviews but I'm not sure how to work them in." (Not counted.)

Speaker 2: "It seems like it would be more valuable to go through career development interviews with your staff and then have them do self management projects to help your system run more smoothly." (Counted as one instance.)

Presenter: "That's a good idea." (Not counted.)

Speaker 3: "I need clarification on one point first: you said people dropped out of the self management
projects, but it sounded like you included these people along with those who finished the projects when you showed the quiz gain scores. It seems like you should treat those who dropped out separately in order to see your effects clearly."

(Counted as one instance.)

Presenter:  "I did, the second group — here— are those that dropped out."

(Not counted.)

Speaker 3:  "Okay, I see, okay." (Not counted.)

Speaker 4:  "Two general areas: one is what you can do to get some information from what you've already got -- try looking at the different motivational groups. It may be that those who have to do the project because their scores are low show different effects than those who do them voluntarily. Secondly, for the next time you run this, you need to have control groups to make sense of gain scores." (Counted as two instances.)
APPENDIX B: Definitions and Examples of Entries for the Self
APPENDIX B

Entries for the Self

Entries for the self were the products of writing behavior having potential benefits for the writer, but not the presenter. During the baseline condition most entries for the self were instances of taking dictation, in which the stimulus products of the writer's behavior share point to point correspondence with those of the speaker's behavior. During the second and third conditions most entries for the self consisted of intraverbals and mands upon the writer (Skinner, 1957).

Examples

Taking dictation

1) "R.W.M. suggests a 'management training package.'"
2) "$100 gift certificates didn't get evaluations in!"
3) "Design is multiple baseline across subjects on feedback."

Intraverbals and mands

1) "State the social validity of my thesis - is it helping staff, students or both?"
2) "Read K.K.'s dissertation."
3) "Is assignment of a task a directional or instructional antecedent - can I add this to my theoretical analysis or my presentation?"
APPENDIX B
(continued)

4) "Can I use his rating scale with my study instead of my rating scale?"

5) "Maybe I could also use a suggestion box for my class."
APPENDIX C: Definitions and Examples of Entries for the Presenter
APPENDIX C

Entries for the Presenter

Entries for the presenter were the products of writing behavior having benefits for the presenter. They consisted of intraverbals, mands, and a small portion of tacts, none of which shared point to point correspondence with the products of the speaker's behavior (Skinner, 1957).

Examples

1) "Do you give a quiz over rules to make sure they study?"
2) "How can you determine if students will ever do another self management project? Is this not one of your goals?"
3) "By providing an intermittent schedule of consequences for complex objectives you may weaken the effects of those objectives."
4) "Can you go back and get data on the other seven subjects?"
5) "Sounds like your course evaluations are unreliable if most say they write out objectives and only 15% say they turn them in for bonus points -- would be better to look at only those subjects who turn them in to know that they're engaging in the behavior."

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APPENDIX D: Definitions and Examples of Original and Unoriginal Entries (Self-as-source and Other-as-source entries)
APPENDIX D

Sources of Entries

Self-as-source entries

Responses having stimulus products, which did not share point to point correspondence or formal similarity with auditory or visual stimuli produced by the presenter, were defined as self-as-source entries. Self-as-source is roughly analogous to originality, entries of this type constituting novel sequences of intraverbals attributable to unique verbal histories, as well as certain mands (Skinner, 1957).

Examples

1) Presenter showed test scores; subject wrote, "gain scores may be more representative of your dependent variables than the measure you've selected."

2) Presenter said, "It's too easy for subjects to cop out..."; subject wrote, "don't use slang or profanity in public presentations."

3) Presenter said, "We gave bonus points for doing self-management projects"; subject wrote, "is self-management an accurate term when the experimenter maintains the contingencies for engaging in it?"

Others-as-source entries

Responses having stimulus products which did not share point
to point correspondence or formal similarity with auditory or visual stimuli produced by the presenter were defined as others-as-source entries. Others-as-source is roughly analogous to unoriginality, entries of this type constituting instances of taking dictation or copying a text (Skinner, 1957).

Examples

1) Presenter put up an overhead transparency which read:
"Purpose of Study: to compare the effects of positive modeling and discrimination training procedures on the acquisition of behavior principles in an undergraduate psychology class"; subject wrote, "purpose of study - to compare positive modeling and discrimination training procedures."

2) Presenter said, "subjects' GRE scores were used as a matching variable"; subject wrote, "subjects matched by GRE scores".
APPENDIX E: A Finer Grained Analysis of Entries for the Presenter:
Definitions of Thematic Units, Examples and Results
APPENDIX E

Thematic Units of Writing Behavior

A finer grained analysis of written entries for the presenter seemed useful in assessing the educational value of audience members' behavior. Four classes of responses were identified, based on their topographies, including: substantive; claritive; confirmatory; and delivery-related. A class instance occasionally contained more than one entry. This was the case when a sequence of responses, in close spatial proximity, appeared to pertain to a single issue. For this reason class instances were called "thematic units." Definitions of these units follow.

Definitions of Units

Substantive Units

Substantive responses were instances of problem solving, generally. Responses took the form of solutions, or problem solving strategies, under the control of problems cited by the presenter, or identified by the audience member emitting the response. Responses which induced the presenter to consider additional issues (regardless of their problematic nature and with or without reasons as to why the presenter should consider these issues), are also included.

Examples
APPENDIX E
(continued)

1) "Problem: in one case you're requiring a response on
the subject's part, in the other you're not. Confounding -- need to have the positive modeling group identify
features of correct responding overtly to avoid this."

2) "Averaging data seems to obscure what's going on -- why
not look at each value of the dependent variable separ­
ately and for individual subjects?"

Claritive units

Claritive responses were primarily questions, concerning
features of the presentation which were unclear to the audience
member, inducing the presenter to repeat points made or to para­
phrase them for clarity. Comments that certain points were clear­
ly made are also included in this class. Rhetorical questions,
followed by substantive responses were included in the substan­tive class.

Examples

1) "What are 'job slips'?"

2) "What day was observation done?"

3) "Clear description of task key."

Confirmatory units
Confirmatory responses were instances of agreement or disagreement with substantive responses made by other members of the audience; or agreements with points made by the presenter. (Disagreements with points made by the presenter were included in the substantive class.)

Examples

1) "Take additional data like Sheldon said."
2) "I don't believe that overt responding has not been shown important re: Terry's comment."
3) "I like your analysis of complex objectives involving components of simple ones."

Delivery-related units

Delivery-related responses were comments on the public-speaking behavior of the presenter, audio-visual materials used, etc. Responses constituting "praise" were also included.

Examples

1) "Spend less time reading results."
2) "Watch apologies."
3) "Good visual aides."
4) "Enjoyable presentation."
APPENDIX E
(continued)

Results of Thematic Unit Analysis

Rates of thematic unit classes, contained in entries for the presenter, across sessions, are shown in Appendices M and N, for experienced and inexperienced subjects, respectively. Confirmatory and delivery-related entries occurred at very low rates throughout and are not shown graphically.

In general, both groups showed increases in the rates of all classes from Baseline to the introduction of the note form and round-table discussion. With the introduction of the contract, only substantive rates were maintained, other classes for both groups of students showing decreases.

Experienced student’s median rates of thematic units were:
substantive: Baseline .035 entries per minute (2.25 entries per student per session), Note Form and Round Table .06 (4.5), Note Form, Round Table and Contract .08 (7.25); claritive: .02 (1.79), .035 (1.95), and .02 (2.15), (see Appendix N.)

Inexperienced students’ median rates of thematic units were:
substantive: Baseline .01 (.93), Note Form and Round Table .045 (1.79), Note Form, Round Table and Contract .03 (2.61); claritive: .01 (.40), .025 (.98), and .02 (2.08), (see Appendix M.)

The reliability of these observations was calculated by dividing the number of agreements between the primary and secondary observers’ data by the number of agreements plus disagreements.
between their observations \times 100. The reliability percentages for thematic classes were: substantive, 91% and claritive, 89%. 
APPENDIX F: Subdivisions of Entries for the Self: Definitions

and Examples of Entries Specifying Follow-up Actions
Entries specifying follow up actions to be taken

Entries specifying follow up actions to be taken were largely demands upon the writer, enjoining the writer to take some form of action specified in the entry. These entries usually contained verb forms.

Examples

1) "Read Kathy Krumhus' dissertation."
2) "Determine what is a social validity measure for my thesis."
3) "Have class assistants report data to me weekly next semester."

Entries not specifying follow up actions to be taken

These entries specified no action for the writer to take, rather they were instances of taking dictation or copying a text, typically.

Examples

1) "Design: multiple baseline across subjects."
2) "Dependent variables: timing, greeting, courtesy."
APPENDIX G : Baseline Condition Instructions
APPENDIX G

Baseline Condition Instructions

The experimenter explained the purpose of the study, the dependent variables, and the independent variables by reading the Informed Consent for Human Subjects Research statement appearing below. Subjects were told that they could interact vocally with the presenter at any time during the meeting. They were further instructed that any notes taken by subjects during the study would be collected by the experimenter and returned within two days. All subjects read and gave informed consent, as follows.

Informed Consent for Human Subjects Research

Title of Study

Modifying the Behavior of the Audience

Purpose of Study

To measure and accelerate the rates of particular forms of verbal behavior on the parts of designated listeners, under the control of vocal stimulation from a speaker; and to accelerate the rates of subsequent verbal and non-verbal behavior on the parts of listeners under the control of the stimulus products of their own verbal behavior emitted at an earlier time.

Procedure

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The vocal and written verbal behavior of the audience will be observed, classified, and measured under various conditions distinguished by: differences in the opportunity to engage in vocal behavior; impositions on the structure of written behavior; and implicit social contingencies involving both vocal and written behavior. Subsequent behavior under the control of stimuli produced by writing will also be occasioned, measured, and consequated.

Anonymity of Data

Only the experimenter will have access to identified individual subject data. In any form of public presentation or publication, individual subjects' names will not be released or associated with the data in any way.

Withdrawal for the Study

A subject may withdraw from the study at any time by submitting a request to withdraw to the experimenter.

I understand that by signing below I am agreeing to participate as a subject in this study.

Signature:___________________________
Date:_______________________________
APPENDIX H

Noteform and Roundtable Condition Instructions

The experimenter informed the subjects that these instructions and procedures comprised the second phase of the research. They were further instructed that data would continue to be collected on vocal and writing behavior. In addition, data would be collected on whether or not action was taken on entries by the predicted dates of action as specified by subjects. The written instructions, given to subjects, follow.

Responsibilities of Subjects

1. As members of the audience:
   a. during the large group meetings confine all writing activity to the spaces provided on the note forms. Use as many forms as necessary.
   b. make entries "for self" on the left side of the form, and entries "for presenter" on the right side of the form. As you make each entry, indicate its source in the space provided.
   c. at the end of the presentation, tear the noteform along the dashed line. Give the right side (entries for presenter) to the presenter.
   d. on the left side (entries for self), record an application code for each entry in the spaces provided, and a date upon which action will be taken with respect to this entry.
e. give the left side (entries for self) to the presenter.

f. during this phase, please refrain from making comments and suggestions until after the formal presentation is given. There will be time for questions and comments after the presentation. You may ask questions for clarification during the presentation, as you wish.

2. As the presenter:
   a. read the entries for presenter given to you by members of the audience.
   b. return the entries for presenter to the experimenter at the end of the meeting.

3. All subjects:
   a. attend a brief weekly meeting with the experimenter.
   b. complete evaluations as requested.
   c. keep a copy of these instructions in your research notebook and bring this notebook to the large group meeting and to brief meetings with the experimenter.

Responsibilities of Experimenter

1. Entries for self will be returned to subjects after data collection.

2. Entries for presenter will be returned to presenters after data collection.

Definitions
APPENDIX H
(continued)

1. **Entries**: There are two kinds of entries: entries for yourself, and entries for the presenter. An entry, once made, becomes a verbal stimulus. The entries for self should amount to verbal stimuli that could control potentially useful behavior on your part some later time. Entries for the presenter should amount to verbal stimuli that could control potentially useful behavior on the presenter's part at some later time.

2. **Sources of Entries**: The sources of entries refers to the controlling variables on entries. The form of the entry may be the same as the controlling stimulus or it may be different. If you write down exactly what a speaker says (or a close approximation), then the form of the entry is the same as the controlling stimulus and the primary source of such an entry is "p" if the speaker was the presenter, or "A" if the speaker was a member of the audience. If you write down something other than what was said by the presenter or a member of the audience, then the form of the entry is different from that of the controlling stimulus. The primary source of such an entry is "M", which stands for "me". Indicate only one source for each entry. If two or more sources seem appropriate for a given entry, indicate what you think is the primary source only.

3. **Application areas**: Application areas refer to those activities of an academic or professional sort in which you are currently engaged. Each application area is given a one or two letter code,
APPENDIX H  
(continued)

to be placed in the box labeled "code".

Some entries will consist of business items brought up before or after the formal presentation of research. These entries should be coded "B". Some entries will consist of direct transcription of the presentation such as the purpose of the research, etc., and may not be applicable to your research or any other ongoing activity. These entries should be coded "X".

4. **Action Dates:** Action dates refer to the dates upon which you predict that you will take action on the basis of entries you have made. Dates are recorded as weeks and months. For example: if you predict that you will take action on a particular entry during the second week of November, the action date would be "2-11". Record the year only when it is not 1978.

5. **Taking Action on Entries:** Taking action on entries refers to your re-reading entries you have made at some later time and your engaging in some behavior under the control of the entry. The behavior you engage in may be either verbal or non-verbal. Verbal action is defined as incorporating the substance of the entry into a version of your research write-up, in a formal research proposal, or in any other formal text such as a procedure manual or class assignment. Non-verbal action is defined as implementing the substance of an entry in ongoing research or any other activity or a professional or academic sort.
APPENDIX I : Note Form, Round Table, and Contract Condition

Instructions
APPENDIX I

Noteform, Roundtable and Contract Condition Instructions

The experimenter instructed the subjects that the change in conditions, at this point, amounted to allowing subjects to enter into a contractual agreement to take action on entries for the self by the dates specified for these entries. Subjects who did not wish to take advantage of these contingencies were not obligated to do so: contracting was optional. All other procedures remained unchanged. The contingencies for those who wished to contract follow.

Contract Contingencies

One positive point, toward a letter of recommendation from the faculty advisor, may be earned for each contracted entry on which action has been taken by the date specified for that entry. One negative point may be earned for each contracted entry on which action has not been taken by the date specified for that entry. Only those entries for the self which have action dates specified and are circled by the subjects, indicating that subjects wish to be held accountable for taking action on these entries, are eligible. Subjects may circle any number of entries or not on a given occasion, as they see fit. (Entries not circled are not subject to the point contingencies; however, action-taken data will continue to be collected on data entries regardless of whether or not they are circled.)

The points earned will be reported to the faculty advisor, for purposes of inclusion in letters of recommendation, in the following
APPENDIX I
(continued)

form: subject's name; number of circled entries; number of circled entries on which action was taken by date; percent of circled entries on which action was taken by date. No data will be reported for subjects not contracting to take action.

The weekly meetings between the subjects and the experimenter shall be the occasion on which points will be awarded. Failure to attend the weekly meetings will result in earning of negative points for those entries subject to review that week. Subjects may reschedule meetings, if necessary, by contacting the experimenter in advance.

Definition of taking action on entries

Taking action may amount to further verbal behavior with respect to the content of the entry, or non-verbal behavior with respect to the entry. If the action is verbal it must consist of having included the substance of an entry in a formal research write-up proposal. It may also be included in instructions for staff members, procedure manuals, assignments, etc. Non-verbal action will consist of implementing some procedure or change in procedure in a system. Documentation for non-verbal action may require a witness. Documentation for a verbal action will consist of the manuscript in which the entry is included.

Points will be awarded for documented entries only.
APPENDIX J : Individual Experienced Subjects' Rates per Minute
of Entries for the Self and for the Presenter
Across Sessions
APPENDIX K: Individual Inexperienced Subjects' Rates per Minute of Entries for the Self and for the Presenter, Across Sessions
APPENDIX L: Individual Experienced Subjects' Rates per Minute of Original (Self-as-source) and Unoriginal (Others-as-source) Entries, Across Sessions
APPENDIX M: Individual Inexperienced Subjects' Rates per Minute of Original (Self-as-source) and Unoriginal (Others-as-source) Entries, Across Sessions
RATE PER MINUTE OF ENTRIES: SELF-AS-SOURCE & OTHERS-AS-SOURCE

KEY:
- self-as-source entries
- others-as-source entries

SESSIONS

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APPENDIX N: Individual Experienced Subjects' Rates of Substantive and Claritive Entries for the Presenter, Across Sessions

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RATES PER MINUTE OF WRITTEN THEMATIC UNITS: SUBSTANTIVE UNITS & CLARITIVE UNITS

KEY:
• written claritive units
○ written substantive units

NOTEFORM ROUND TABLE BASELINE ROUND TABLE CONTRACT

S3
S4
S12
S7

RATES PER MINUTE OF WRITTEN THEMATIC UNITS: SUBSTANTIVE UNITS & CLARITIVE UNITS

SESSIONS

SESSIONS
APPENDIX O : Individual Inexperienced Subjects' Rates of Substantive and Claritive Entires for the Presenter, Across Sessions
APPENDIX P : Individual Experienced Subjects' Rates of Vocal Behavior, Across Sessions
RATE PER MINUTE OF UNINTERRUPTED INSTANCES OF VOCAL BEHAVIOR

BASELINE    NOTEFORM    NOTEFORM
ROUND TABLE  CONTRACT

0  1  2  3  4  5  6  7  8  9  10  11  12  13
SESSIONS

S1

S4

S12

S3

S7

45.85

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APPENDIX Q: Individual Inexperienced Subjects’ Rates of Vocal Behavior, Across Sessions
APPENDIX R : Individual Experienced Subjects' Number of Entries for Self Specifying Follow-up Action and Instances of Follow-up Action. (Arrows indicate instances of contracting to take follow-up action.)
NUMBER OF ENTRIES AND INSTANCES OF FOLLOW-UP ACTION

KEY:
- entries specifying action
- instances of action taken

SESSIONS

SESSIONS
APPENDIX S: Individual Inexperienced Subjects' Number of Entries for the Self Specifying Follow-up Action and Instances of Follow-up Action. (Arrows indicate instances of contracting to take follow-up action.)
NUMBER OF ENTRIES AND INSTANCES OF FOLLOW-UP ACTION

KEY:
• - entries specifying action
□ - instances of action taken

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