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ABSTRACT
            Secondary education majors participated in a one-week
microteaching program in which they were trained to identify and
quantify verbal behaviors that inhibit teacher clarity. Teacher
clarity indicators were identified as vagueness terms and mazes.
Vagueness terms are indicated by approximation or lack of clarity and
assurance. Mazes are garbles, stutters, slips of the tongue, false
starts, and redundancy. Students in both the experimental and control
groups were completing certification requirements or were updating
certificates they currently held. All students were assigned two
lesson topics to prepare for presentation to a class. After the
students in the experimental group presented their first lesson, the
investigator defined vagueness terms and mazes. Sample tapes of the
lessons were played and the experimental group was trained to
identify and quantify vagueness terms and mazes. Ways to reduce the
frequency of these terms and mazes were discussed. In reviewing their
taped discussions, no mention of vagueness terms and mazes was made
to students in the control group. Students in the experimental group
reduced their use of vagueness terms and mazes from the first lesson,
while those in the control group reduced only the frequency of mazes.
Although these research results were interpreted within certain
limitations, it can be concluded that teachers can be trained to
significantly reduce the frequency of vagueness terms by focusing on
the terms and by preparing lessons to eliminate them. Mazes can be
reduced by simply presenting lessons and reviewing their
presentations. (JD)

According to Rosenshine (1971), teacher clarity is an important aspect of effective instruction. Research has shown that teacher clarity affects student achievement (Land, 1979; Land & Smith, 1979; Dunkin & Doenau, 1980; Smith & Cotten, 1980; Smith & Bramblett, 1981). A number of low-inference teacher-clarity indicators have been identified. Low-inference indicators can be observed and objectively quantified (as opposed to high-inference indicators which are open to subjectivity). Among the low-inference indicators are vagueness terms and mazes. Hiller, Fisher, and Kaess (1969) identified more than 200 vagueness terms. These are words or phrases indicating approximation, unclarity, or lack of assurance. Smith (1977) identified mazes as garbles, stutters, slips of the tongue, false starts or halts in speech, redundantly spoken words, and combinations of words that do not make semantic sense. Research has indicated that teacher vagueness terms and mazes negatively affect student achievement (see references cited above). Descriptive research has shown that teachers use an average of from three to five vagueness terms per minute of teacher talk and an average of four mazes per minute of teacher talk. Although it has been shown that vagueness terms and mazes are inhibitors of teacher clarity, little, if any, research has been conducted to determine whether teachers could be trained to significantly reduce the number of vagueness terms and mazes they use.

Abstract

Each of 48 secondary education majors enrolled in a teaching methods course at a senior college in Georgia. Half of these students were administered a one-week micro-teaching program in which they were trained to identify and quantify verbal behaviors that inhibit teacher clarity. The other 24 students comprised the control group, which was not presented the session on teacher clarity. Analyses of lessons these students presented both prior to the one-week session and after the one-week session indicated that teachers can be trained to significantly improve their verbal behaviors related to teacher clarity.

According to Rosenshine (1971), teacher clarity is an important aspect of effective instruction. Research has shown that teacher clarity affects student achievement (Land, 1979; Land & Smith, 1979; Dunkin & Doenau, 1980; Smith & Cotten, 1980; Smith & Bramblett, 1981). A number of low-inference teacher clarity indicators have been identified. Low-inference indicators can be observed and objectively quantified (as opposed to high-inference indicators which are open to subjectivity). Among the low-inference indicators are vagueness terms and mazes. Hiller, Fisher, and Kaess (1969) identified more than 200 vagueness terms. These are words or phrases indicating approximation, unclarity, or lack of assurance. Smith (1977) identified mazes as garbles, stutters, slips of the tongue, false starts or halts in speech, redundantly spoken words, and combinations of words that do not make semantic sense. Research has indicated that teacher vagueness terms and mazes negatively affect student achievement (see references cited above). Descriptive research has shown that teachers use an average of from three to five vagueness terms per minute of teacher talk and an average of four mazes per minute of teacher talk. Although it has been shown that vagueness terms and mazes are inhibitors of teacher clarity, little, if any, research has been conducted to determine whether teachers could be trained to significantly reduce the number of vagueness terms and mazes they use.

METHOD

This study was conducted during the summer 1981 quarter at a senior college in Georgia. The subjects were 48 secondary education majors enrolled in a teaching methods course. Half of these students comprised the experimental group. Of these 24 students, nine were seniors who planned to complete teacher certification requirements during the 1981-82 academic year. The remaining 15 in the experimental group were post-baccalaureate students who were enrolled to upgrade secondary school teaching certificates they currently held. The subject matter concentrations of these students included art, biology, business, English, mathematics, music, physics, and social studies. The control group was made up of students with similar backgrounds. In the control group were seven seniors who were completing teacher certification requirements, and the remaining 17 were post-baccalaureate students who were upgrading secondary school teaching certificates. The subject matter concentrations of the students in the control group included biology, business, chemistry, English, mathematics, music, and social studies.

The investigator selected two lessons for each student in the experimental group. Each lesson was based on material from Georgia-approved secondary school textbooks, and each lesson corresponded to the subject matter concentrations of the students. For example, one lesson selected for a student with a concentration in social studies focused on the NATO alliance and the other lesson for this student was on the Louisiana Purchase. One lesson selected for a student with a concentration in mathematics focused on factoring

trinomial expressions, and the other lesson involved techniques
for writing natural numbers as products of prime numbers. For each
student in the experimental group, the investigator randomly selected
one of the two predetermined lesson topics and assigned it to the
student five days prior to the day of the student's presentation.
Each student was given the textbook from which the topic was selected.

Guidelines for presenting the lessons indicated that the students
were to prepare objectives and outlines of their lesson plans.
Students were allowed to use any method of presentation so long as
the lessons lasted for at least 15 minutes. Each student presented
the assigned lesson to the other members of the class, and the
investigator tape recorded the lessons. Presentations were graded
according to their organization, the coverage of material, and the
degree to which they paralleled the objectives and lesson plan
outlines. No mention was made of vagueness terms or mazes and
students had no knowledge that these would be quantified.

Exactly the same procedure was used to select and assign lessons,
as well as to evaluate lesson presentations, for the control group.
Since the experimental group and the control group represented two
different sections of the methods course, and therefore met
separately, the same lessons were selected for students in the control
group as for those in the experimental group, provided the subject
matter concentrations were the same. In those instances in which
there was no match between subject matter concentrations, such as
the case for the chemistry major in the control group, every effort
was made to select lessons that required the same degree of preparation

and coverage of content as the other assigned lessons.

After all students in the experimental group presented their first lesson the investigator defined vagueness terms and mazes and informed the students of the negative influence these variables have on achievement. The investigator played sample tapes of lessons that contained vagueness terms and mazes and trained the experimental group to identify and quantify the vagueness terms and mazes. Discussions concerning ways to reduce the frequencies of vagueness terms and mazes were conducted. For example, vagueness terms and mazes occur more frequently when the instructor does not have a command of the subject matter, when the instructor is not sure how to explain a concept, when the instructor is hesitant about the sequence in which concepts should be presented, and when the instructor habitually uses phrases that do not develop the substantive content (such as "you know"). Each student was required to listen to the tape of his/her first lesson and to identify and quantify the vagueness terms and mazes he/she used. The investigator quantified these variables independently for each lesson and training was continued until there was a high degree of agreement (no more than 10 percent difference in quantifications) between quantifications by each student and the investigator. The training period lasted for five consecutive one-hour classroom sessions. Work outside of class also was required for analysis of the tape recordings.

After the students in the control group completed their first lessons, they were required to review their tape recorded presentations and to identify ways in which they could improve. No mention of vagueness terms and mazes was made to students in the control group.

Instead, a five-day series of presentations related to teacher-student relations and classroom management was conducted. Topics such as transactional analysis and reality therapy were covered. The investigator carefully quantified the vagueness terms and mazes used by students in the control group.

After the five-day sessions with the experimental and control groups, and five days prior to the day scheduled for the next lesson presentation, all 43 students were assigned the second of their two lesson topics and again were given the textbooks from which the topics were selected. The only difference in guidelines for presenting the second lessons was that the students in the experimental group were told to plan to reduce the frequency of vagueness terms and mazes they used.

The second series of lessons was tape recorded, and vagueness terms and mazes were carefully quantified again.

RESULTS

A 2 X 2 (between-within) two-factor mixed design (also referred to as a repeated measures factorial design) was used to analyze the student performance, with the frequency of vagueness terms per minute of teacher talk as the dependent variable. The same design was used with the frequency of mazes per minute of teacher talk as the dependent variable.

Tables 1 and 2 represent the means and standard deviations of the experimental and control groups for the frequencies of vagueness terms and mazes respectively. Tables 3 and 4 represent the F ratios for the two ANOVAs.

Table 1 indicates that students in the experimental group reduced the frequency of vagueness terms they used in the second lesson, whereas the frequency of vagueness terms used by students in the control group was stable from the first lesson to the second lesson. This is verified in Table 3, which shows a significant interaction between group and lesson number ($F(1,46)= 5.48$, $p < .025$).

Table 2 indicates that students in both the experimental group and the control group reduced the frequency of mazes they used in the second lesson. Table 4 supports this contention, in that there was a significant difference between the frequencies of mazes in the second lesson as compared to the first lesson ($F(1,46)= 10.62$, $p < .005$).

DISCUSSION

Cautions must be observed in interpreting these data. First, students were not randomly assigned to the experimental group or the control group. Students were placed in groups in accordance with the course section in which they enrolled. Second, although care was taken in assigning similar lessons to students in both groups, there were discrepancies due to variations in subject matter concentrations of those enrolled. Third, each lesson lasted only 15 to 30 minutes and is not representative of teacher discourse over a longer period of time. Fourth, teachers in natural classroom settings do not have an evaluator present who rates them according to lesson organization, coverage of material, and effective use of behavioral objectives.

Finally, this study does not indicate the effect that training in teacher clarity has over a longer series of lessons.

With these cautions in mind, the following conclusions are made. Teachers can be trained to significantly reduce the frequencies of vagueness terms they use. Such training involves intense focus on vagueness terms per se and on preparation of lessons to eliminate vagueness terms. Interestingly, it appears that teachers can reduce mazes by simply presenting lessons and reviewing their presentations. That is, students reduced mazes regardless of whether they were trained to identify and quantify mazes. It may be that students are less nervous in subsequent presentations than in the first presentation, and that the lower level of anxiety helped to reduce mazes.

A final observation is that the students in this "laboratory setting" used a lower mean frequency of vagueness terms and mazes than mean frequencies reported in research conducted in natural settings. Such research (Smith, 1977; Dunkin & Doenau, 1980) indicated means of three to five vagueness terms per minute and of four mazes per minute. It may be that the presence of an evaluator, who rates lessons according to criteria such as organization and content coverage, causes presenters to plan lessons more carefully, thus reducing the vagueness terms and mazes.

The single most relevant suggestion for teacher trainers is that trainers focus on low-inference teacher clarity variables that can be observed and objectively quantified. Such low-inference variables should be related to results of research concerning student growth, such as student achievement.

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Table 1

Means for Vagueness Terms Per Minute Teacher Talk

	Lesson 1	Lesson 2
Experimental Group	Mean = 2.70 SD = 1.10 N = 24	Mean = 1.96 SD = 1.00 N = 24
Control Group	Mean = 2.65 SD = 1.47 N = 24	Mean = 2.66 SD = 1.91 N = 24

Table 2

Means for Mazes Per Minute Teacher Talk

	Lesson 1	Lesson 2
Experimental Group	Mean = 2.48 SD = 1.61 N = 24	Mean = 1.75 SD = 1.71 N = 24
Control Group	Mean = 2.31 SD = 1.51 N = 24	Mean = 1.90 SD = 1.50 N = 24

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Table 3

ANOVA for Vagueness Terms Per Minute Teacher Talk

Source	df	SS	MS	F
Between-Subjects	47	102.65	—	
Groups	1	2.52	2.52	1.16
Error: Between-Subjects	46	100.13	2.18	
Within-Subjects	48	35.15	—	
Trials	1	3.22	3.22	5.19*
Groups X Trials	1	3.40	3.40	5.48**
Error: Within-Subjects	46	28.53	0.62	

$* \underline{p} < .05$
$** \underline{p} < .025$

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Table 4

ANOVA for Mazes Per Minute Teacher Talk

Source	df	SS	MS	F
Between-Subjects	47	196.98	——	
Groups	1	0.01	0.01	0.002
Error: Between-Subjects	46	196.97	4.28	
Within-Subjects	48	42.32	——	
Trials	1	7.86	7.86	10.62*
Groups X Trials	1	0.60	0.60	0.81
Error: Within-Subjects	46	33.86	0.74	

*$p < .005$