

# THE RELATIONSHIP BETWEEN VERBAL TEACHER IMMEDIACY BEHAVIORS AND STUDENT LEARNING

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*Previous research has indicated that nonverbal teacher behaviors such as smiling, vocal expressiveness, movement about the classroom, and relaxed body position are salient low-inference variables of a process which results in a product of increased cognitive and affective learning. This study identified a set of verbal teacher immediacy behaviors which similarly relate to increased student learning. Results indicated differentiated use of various types of verbal immediacy messages between small and larger classes, and that the impact of teacher immediacy behaviors (both verbal and nonverbal) on learning is coincidentally enhanced as class size increases. The study provides empirical definition of a specific set of low-inference verbal variables which, in combination with previously identified nonverbal variables, clarify a single process-product model for effective instructional interaction.*

Teaching-learning interactions, like other interpersonal relationships, are characterized by both explicit and implicit communication (Mehrabian, 1981). Interpersonal perceptions and communicative relationships between teachers and students are crucial to the teaching-learning process, and the degree of immediacy between teacher and students is an important variable in those relationships (Andersen, 1978, 1979; Richmond, Gorham & McCroskey, 1986). Mehrabian (1981) has noted that "a considerable accumulation of evidence from various fields of psychology points to a very elegant conceptualization of human emotions, attitudes, likes-dislikes, and preferences [which are the referents of implicit communication]. Very simply, all emotional states can be described adequately in terms of three independent dimensions of pleasure-displeasure, arousal-nonarousal, and dominance-submissiveness" (p. 5). The more a person, object, or situation elicits pleasure, the more it is liked. The more arousing a pleasurable entity is, the more it is liked. The more submissive a person feels in a relationship, the less variation there will be in liking, despite large variations in pleasure, arousal, or both. Thus we have three major referent dimensions in implicit communication: pleasure-liking, arousal, and dominance. The behaviors which communicate these referents can be classified as approach-avoidance, arousal-activity, or power-status metaphors.

Like, as opposed to dislike, is expressed and understood in terms of the approach metaphor, behaviors which reduce physical or psychological distance and/or increase perceptual stimulation between and among interactants. Arousal is conveyed in part by variety or "shifts" in body position, vocal expression, and facial expression. Power is communicated through size, expansiveness, control, and relaxation (Mehrabian, 1981). Quantity of talking also indicates power: those who talk more are perceived as more dominant (Sorrentino & Boutillier, 1975; Stang, 1973). These metaphors have

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been characterized largely in terms of nonverbal behaviors, which have, in turn, been related to effective teaching-learning relationships.

Andersen (1978, 1979) found a significant relationship between nonverbal teacher immediacy ("The more immediate a person is, the more likely he/she is to communicate at a close distance, smile, engage in eye contact, use direct body orientation, use overall body movement and gestures, touch others, relax, and be vocally expressive" [1979, p. 548]) and affective learning in college classes: immediacy predicted 46% of the variance in the students' affect toward the instructor, 20% of the variance in students' affect toward the content, and 18% of the variance in students' behavioral commitment. McDowell, McDowell and Hyerdahl (1980) replicated Andersen's study with similar results at the junior and senior high school levels. Richmond, Gorham and McCroskey (1986) found nonverbal teacher immediacy behaviors substantially associated with cognitive learning at the college level. Vocal expressiveness, smiling at the class, and having a relaxed body position emerged as particularly meaningful behaviors; increased teacher movement and gesturing also related clearly to increased cognitive learning.

The contribution of teachers' verbal behavior to learning has been explored in terms of power relationships. The use of prosocial (based on reward, expert, and referent power) as opposed to antisocial (based on coercive and legitimate power) messages to alter student behavior has been shown to increase perceptions of teacher immediacy, which leads to greater affective (Plax, Kearney, McCroskey & Richmond, 1986) and cognitive (Richmond, McCroskey, Kearney & Plax, 1985) learning.

We thus know that teachers who verbalize the positive results of on-task behavior are perceived as more immediate than those who verbalize the negative consequences of failing to comply and that a particular set of power messages is likely to be related to increased learning. The objective in this study was to identify whether a similar set of approach messages might also be associated with increased immediacy and learning. The identification of such specific "effective teacher" behaviors has significant value. While continuing concern is expressed in both popular and scholarly literature regarding educational outcomes, the prescriptive means of attaining those outcomes remains unclear (Simon & Boyer, 1974).

The product in an instructional process-product model is learning: cognitive, affective, and behavioral. The utility of such a model is limited by the clarity with which the process component is operationalized. Various high-inference qualities have been associated with effective teaching-learning transactions, e.g., clarity, warmth, task-orientation, class cohesiveness. The ability to delineate low-inference variables which are associated with desired outcomes, however, is necessary before a process-product model is of genuine use in training or evaluation. It is difficult to apply prescriptions to increase "warmth" or "class cohesiveness" in a general sense; the terms are abstract and a teacher must draw his or her own conclusions regarding how to do so. If, however, we can tell that teacher that smiling increases warmth, we have identified a specific behavior which can be modified. The prescription has become concrete; the teacher need not infer what it implies. Immediacy itself is a high-inference quality which has been clearly linked to student learning. As previously noted, nonverbal behaviors such as smiling, vocal expressiveness, teacher movement, and relaxed body position, and verbal prosocial behavioral alteration messages have been identified as salient low-inference variables of a process which results in a product of increased affective and cognitive learning. The research

questions in the present study were directed toward additional clarification of the process-product immediacy model:

RQ1: To what extent are student perceptions of individual types of verbal teacher immediacy behaviors associated with learning?

RQ2: To what extent are student perceptions of teacher verbal immediacy behaviors collectively associated with learning?

Although the major focus of this study was verbal immediacy, the procedure employed (outlined below) permitted replication of the research on nonverbal immediacy reported by Richmond, Gorham, and McCroskey (1986). It also permitted extending this research to provide a comparison of the effects of verbal and nonverbal immediacy on learning.

## PROCEDURE

### *Measurement*

*Immediacy.* Mehrabian (1967, 1981) has characterized verbal immediacy as stylistic differences in expression from which like-dislike is inferred. Approach-avoidance, for example, is expressed through variations in adjectives ("This person needs help" vs. "That person needs help"), verb tense (present vs. past), order of occurrence of references, inclusivity ("we" vs. "I"), mutuality ("Judy and I do X" vs. "I do X with Judy"), implied voluntarism ("want to" vs. "have to" or "should"), probability ("will" vs. "may"), conditionality ("I would like to see you again" vs. "I want to see you again"), and responsibility ("I conclude" vs. "The results lead me to conclude," "I don't like her" vs. "Most people find her an intolerable bore"). Wiener and Mehrabian (1968) have developed a procedure for analyzing linguistic immediacy which involves dividing language samples into clauses and scoring them based on the presence of any of nine classes of nonimmediacy features. Various studies have shown that unpleasant experiences are referred to with greater nonimmediacy than pleasant ones, that nonimmediacy of verbal communication increases as negative affect increases (Conville, 1974), that positive verbal immediacy is associated with positive perceptions of the intended receiver, that receivers perceive verbal immediacy as a sign of high affect, and that verbal immediacy is directly related to receiver judgements of source competence and character (Bradac, Bowers & Courtright, 1979).

We have evidence that verbal behavior, as well as nonverbal behavior, contributes to perceived immediacy. In terms of our process-product model for instructional interaction, however, these verbal-linguistic behaviors present some problems. When presented to 45 teachers and school administrators, they noted without exception that, while the prescriptive and evaluative value of the low-inference nonverbal variables identified in previous studies was apparent, the linguistic component of the model was not useful because the variables were simply too difficult to monitor. As a content analysis procedure, the Wiener-Mehrabian process appears to be a valid means of assessing the attitudes of a speaker/writer; as feelings of like-dislike change, linguistic patterns change. The patterns are an artifact of affect. Whether or not they can be utilized as strategies for generating affect, however, is questionable.

We subsequently approached the definition of verbal immediacy variables from a different direction. Forty-seven advanced undergraduate students enrolled in upper-division communication courses participated in a small-group brainstorming

exercise in which they were asked to think of the best teachers they had had throughout all their years of school and list the specific behaviors which characterized those teachers. Behaviors generated across groups were consolidated into a list of 21 items. Two items were eliminated as extraneous to our interest in verbal teacher behaviors, one a general reference to content knowledge (“knew her stuff,” “up to date”) and one related to nonverbal behavior (vocal expressiveness; it is interesting to note that vocal expressiveness was the only explicitly defined nonverbal behavior listed by the groups, and that it was mentioned by *all* the groups). Of the remaining 19 items, three which were stated negatively (Doesn’t call on students unless they indicate they want to talk; Doesn’t ask questions that have specific, correct answers; Doesn’t criticize or point out faults) were restated as positive to provide consistency across final survey items. One item was added (Refers to class as “my” class or what “I” am doing) to contrast the only linguistic variable (Refers to class as “our” class or what “we” are doing) similar to those previously identified by Mehrabian.

Subjects ( $N = 387$ ) were asked to indicate the frequency with which the teacher in the class immediately preceding the one in which they completed the research instruments used each behavior presented. (The use of students’ assessment of such behaviors has been found to be a valid method of obtaining such data. Andersen [1978] reported high correlations between student reports and reports of trained observers.) Frequency scores ranged from 0 (Never) to 4 (Very Often). The 20 verbal behaviors were followed by 14 nonverbal behaviors previously identified as immediacy behaviors (Richmond, Gorham & McCroskey, 1986) (Table 1). Factor analysis indicated that both verbal and nonverbal items loaded on a single factor. All items had their highest loading on the first, unrotated factor. Forced two, three, and four rotated factor solutions (oblique) did not yield interpretable results. The verbal “effective teacher” behaviors generated by students in the preliminary phase of the study were thus classified as verbal immediacy behaviors.

A total verbal immediacy score was calculated by summing the frequency scores across all verbal items. A total nonverbal immediacy score was similarly generated, reflecting items where necessary. Items 9 (Refers to class as “my” class or what “I” am doing), 15 (Asks questions which have specific, correct answers), 18 (Criticizes or points out faults), and 29 (Sits on a desk or in a chair while teaching) were eliminated as weak items. These items correlated below .25 with the total score for verbal (items 9, 15, and 18) or nonverbal (item 29) immediacy. All other items were correlated at least .45 with the respective total. The split-half reliability was .94 for the remaining 17 verbal immediacy items and .84 for the remaining 13 nonverbal immediacy items.

*Cognitive learning.* Cognitive learning was assessed via student perceptions of their own learning, an approach supported in previous research (Richmond, et. al., 1985, 1986) as an appropriate alternative to assessment using course grades or standardized tests. We believe college students, with considerable experience in the school environment, are reasonably able to provide accurate estimates of learning. We have often heard comments from students such as “I got a C but I learned a lot” or “I didn’t learn anything but I got an A.” The instructional literature provides no solution to the problem of validity in assessment of cognitive learning, with different measures providing unique information and posing unique problems.

The use of standardized tests was clearly not useful across the disparate content areas reflected in the study. It is also questionable whether such tests reflect learning in its purest sense since performance is affected by such factors as short-term recall

TABLE 1  
IMMEDIACY BEHAVIOR ITEMS

*Verbal items:*

1. Uses personal examples or talks about experiences she/he has had outside of class.
2. Asks questions or encourages students to talk.
3. Gets into discussions based on something a student brings up even when this doesn't seem to be part of his/her lecture plan.
4. Uses humor in class.
5. Addresses students by name.
6. Addresses me by name.
7. Gets into conversations with individual students before or after class.
8. Has initiated conversations with me before, after or outside of class.
9. Refers to class as "my" class or what "I" am doing.\*
10. Refers to class as "our" class or what "we" are doing.
11. Provides feedback on my individual work through comments on papers, oral discussions, etc.
12. Calls on students to answer questions even if they have not indicated that they want to talk.\*
13. Asks how students feel about an assignment, due date or discussion topic.
14. Invites students to telephone or meet with him/her outside of class if they have questions or want to discuss something.
15. Asks questions that have specific, correct answers.\*
16. Asks questions that solicit viewpoints or opinions.
17. Praises students' work, actions or comments.
18. Criticizes or points out faults in students' work, actions or comments.\*
19. Will have discussions about things unrelated to class with individual students or with the class as a whole.
20. Is addressed by his/her first name by the students.

*Nonverbal items:*

21. Sits behind desk while teaching.\*
22. Gestures while talking to class.
23. Uses monotone/dull voice when talking to class.\*
24. Looks at class while talking.
25. Smiles at the class as a whole, not just individual students.
26. Has a very tense body position while talking to the class.\*
27. Touches students in the class.
28. Moves around the classroom while teaching.
29. Sits on a desk or in a chair while teaching.\*
30. Looks at the board or notes while talking to the class.\*
31. Stands behind podium or desk while teaching.\*
32. Has a very relaxed body position while talking to the class.
33. Smiles at individual students in the class.
34. Uses a variety of vocal expressions while talking to the class.

\*Presumed to be *nonimmediate*. Item scoring reflected for analyses.

ability, writing skills, test anxiety, and whether, in fact, test items address what an individual has actually learned. Assessment via course grades is confounded by variables such as attendance, writing skills, participation, student preparation, and perceived motivation and may reflect student compliance as much as learning. We recognize the possibility that students' subjective assessment of their own learning may be confounded to an unknown extent by affect toward the course and teacher; there is, however, a similar possibility that course grades are confounded by teacher affect toward the student. Milton, et. al., (1986) have, following an extensive study of college grading, concluded that "a grade [on a test or in a course] is a unidimensional symbol into which multidimensional phenomena have been incorporated, a true salmagundi. Translated, this means that a given grade can reflect level of information, attitudes, procrastination, errors or misconceptions, cheating, and mixtures of all these plus other ingredients" (p. 212). The perceived learning measure was

deemed the most suitable of the various cognitive learning measures proposed in the literature. If perceived learning is correlated with variations in teacher behavior we can conclude, at least, that students believe that they learn more from teachers who behave in certain ways. Other means of assessing cognitive learning introduce unaccounted for variables and are no more definitive.

Students were asked to respond to two questions related to learning: "On a scale of 0–9, how much did you learn in the class (0 means you learned nothing and 9 means you learned more than in any other class you've had)?" and (on the same scale) "How much do you think you could have learned in the class if you had the ideal instructor?" A "learning loss" score was calculated by subtracting the response on the first scale from the response on the second scale. This score adjusted for the type of course in question and separated teacher behavior from perceived value of the subject area.

*Affective learning.* Affective learning was assessed via the measures of affect used by McCroskey, Richmond, Plax and Kearney (1985). *Attitudes* toward the course content, behaviors recommended, and course instructor were assessed by four, seven-step bi-polar scales: good/bad, worthless/valuable, fair/unfair, and positive/negative. *Behavioral intention* in terms of likelihood of actually attempting to engage in the behaviors recommended in the course, likelihood of actually enrolling in another course of related content if choice and schedule permitted, and likelihood of actually taking another course with the same teacher if choice and schedule permitted (for the second and third items, graduating seniors were asked to assume they would still be in school) were similarly measured by four, seven-step bi-polar scales: likely/unlikely, impossible/possible, probable/improbable, and would/would not. An overall affect score was generated by adding scores on all six measures. Split-half reliability for this measure was .98.

*Other Measures.* Subjects were asked to indicate their gender, the approximate size of the class which they referenced, whether that class was in their major or intended major, and to estimate the comparative percentages of time in an average class that the teacher talked, that students talked, and that no one talked. The latter measure was taken to determine whether any observed relationship between immediacy and learning is confounded with perceived teacher talk-time.

### ***Subjects and data collection***

Subjects were undergraduate college students enrolled in basic, non-required communication courses which do not include performance requirements. A total of 387 questionnaires with all items completed were analyzed. Approximately half of the subjects were male and half were female. The teachers whose behavior was described ("The teacher in the last class you had before coming to this class") were evenly divided between students' major and nonmajor courses. The data reflect 122 small classes (1–25 students), 144 mid-sized classes (26–50 students), and 121 large classes (51 or more students). The questionnaire was completed during the 12th week of a 16 week semester, after students had had considerable exposure to the instructor but before final grades were known. All responses were anonymous.

### ***Data analyses***

Pearson correlations were computed for both the individual immediacy items and the immediacy scores with the criterion variables (Learning, Learning Loss, Attitude, Behavioral Intent, and Total Affect). These analyses were conducted for the total sample and for each class size subgroup. Pearson correlations were also computed for

perceived teacher talk-time percentage with Learning, Learning Loss, and Total Affect to determine whether learning and perceived teacher talk-time were related.

To determine the extent to which immediacy is predictive of learning, and the unique and joint predictive power of the verbal and nonverbal components, multiple regression analyses were conducted and decomposed. The predictor variables were the total scores for verbal and nonverbal immediacy. The criterion variables were the two perceived learning variables (Learning and Learning Loss) and nine affective variables (attitude toward content, attitude toward behaviors recommended, attitude toward instructor, intent to use behaviors taught, intent to enroll in another course, intent to enroll with the same teacher, general attitude, general behavioral intent, overall affect).

The size of the sample produced very high power for the statistical analyses. Because so many individual correlations were computed with such high power, the probability of finding meaningless but statistically significant relationships was high. Hence, only relationships significant at at least the alpha = .001 level were considered meaningful.

## RESULTS

In general the results of this investigation indicated substantial relationships between immediacy and learning. Both the total verbal and nonverbal immediacy scores and the overwhelming majority of the individual immediacy items were significantly correlated with both affective learning and perceptions of cognitive learning (see Table 2) for the total sample. The same pattern for total scores was evident in the results broken down by class size (see Table 3). However, reduced power in these analyses resulted in less of the correlations generated by individual items meeting our alpha criterion for significance.

Correlations between perceived teacher talk-time and learning were low ( $r < .14$ ) and nonsignificant both for the overall sample and for the various class sizes. This indicates that the observed relationships between immediacy and learning are not simply a function of quantity of teacher talk, as estimated by students.

As would be expected after examination of the simple correlational results noted above, all of the multiple regression analyses yielded meaningful results. Table 4 reports the total variance accounted for by immediacy for each of the criterion variables and the decomposition of that variance. As indicated in the table, the amount of variance predictable varied substantially depending on the criterion variable. In general, the colinearity in prediction by verbal and nonverbal immediacy was very high. This should be taken as evidence, in conjunction with the factor analysis results noted previously, that verbal and nonverbal behaviors function together to generate immediacy and clearly are not functioning as orthogonal factors in the classroom.

Table 5 reports the means of each variable for the total sample and for the three class-size subsamples. These data indicate that normative levels of individual immediacy variables in some cases were seen to be relatively unaffected by class size but in other cases to vary sharply as a function of class size. The verbal and nonverbal total scores indicate very different impacts of class size. Verbal immediacy appears to drop sharply as a function of class size while nonverbal immediacy seems to be comparatively unaffected. These data must be carefully interpreted in conjunction with the correlational data noted above.

TABLE 2

SIMPLE CORRELATIONS OF VERBAL AND NONVERBAL IMMEDIACY ITEMS AND LEARNING MEASURES

	Learning Variable				
	Learning	Learning Loss	Attitude	Behavioral Intent	Total Affect
<i>Verbal Total</i>	.38*	-.44*	.46*	.51*	.51*
<i>Verbal Items:</i>					
1	.22*	-.32*	.30*	.37*	.36*
2	.24*	-.32*	.34*	.31*	.35*
3	.32*	-.37*	.33*	.38*	.38*
4	.39*	-.43*	.48*	.49*	.51*
5	.19*	-.22*	.24*	.27*	.27*
6	.21*	-.24*	.26*	.26*	.28*
7	.30*	-.32*	.36*	.41*	.41*
8	.35*	-.33*	.36*	.42*	.42*
9	.03	-.06	.04	.11	.09
10	.33*	-.32*	.35*	.39*	.39*
11	.32*	-.37*	.36*	.38*	.40*
12	.03	-.03	.07	.07	.08
13	.20*	-.24*	.27*	.33*	.32*
14	.32*	-.36*	.33*	.32*	.34*
15	.30*	-.31*	.25*	.22*	.24*
16	.18**	-.22*	.31*	.34*	.34*
17	.36*	-.43*	.40*	.43*	.44*
18	-.04	.03	-.09	-.02	-.05
19	.19**	-.24*	.23*	.28*	.27*
20	.10	-.17**	.16	.25*	.22*
<i>Nonverbal Total</i>	.41*	-.54*	.57*	.54*	.59*
<i>Nonverbal Items:</i>					
21	.11	-.16**	.14	.09	.12
22	.23*	-.33*	.32*	.32*	.34*
23	.39*	-.50*	.48*	.46*	.50*
24	.28*	-.34*	.42*	.33*	.39*
25	.33*	-.43*	.49*	.45*	.50*
26	.30*	-.39*	.41*	.37*	.41*
27	.15	-.19**	.19**	.30*	.27*
28	.23*	-.32*	.31*	.29*	.32*
29	.05	-.04	.00	-.05	-.03
30	.11	-.24*	.25*	.24*	.26*
31	.02	-.11	.10	.09	.10
32	.37*	-.43*	.46*	.44*	.47*
33	.28*	-.31*	.39*	.40*	.42*
34	.39*	-.46*	.46*	.44*	.49*

\*p &lt; .0001

\*\*p &lt; .001

Analyses based on gender of teacher and nature of class (major/nonmajor) generally produced nonsignificant results. Thus, these will not be reported here in detail.

## DISCUSSION

The results of this study indicate that students' perceptions of teacher immediacy are influenced by verbal as well as nonverbal behaviors, and that these behaviors contribute significantly to learning.

The teacher's use of humor in class appears to be of particular importance, as are his/her praise of students' work, actions, or comments and frequency of initiating and/or willingness to become engaged in conversations with students before, after, or



TABLE 3  
SIMPLE CORRELATIONS OF VERBAL AND NONVERBAL IMMEDIACY ITEMS AND LEARNING MEASURES  
BY CLASS SIZE

Class Size:	Learning			Learning Loss			Total Affect		
	S	M	L	S	M	L	S	M	L***
<i>Item Number</i>									
1	.10	.27**	.28	.19	-.38*	-.35*	.23	.41*	.39*
2	.13	.32*	.29**	-.25	-.34*	-.35*	.26	.37*	.35*
3	.30**	.32*	.36*	-.45*	-.34*	-.28	.44*	.34*	.34*
4	.35*	.45*	.35*	-.43*	-.41*	-.44*	.49*	.56*	.49*
5	.08	.25	.31**	-.13	-.22	-.28	.05	.34*	.34**
6	.11	.26	.35*	-.21	-.21	-.27	.07	.30**	.42*
7	.30**	.30**	.31**	-.39*	-.23	-.32**	.44*	.39*	.38*
8	.43*	.31**	.36*	-.43*	-.22	-.34*	.49*	.35*	.42*
9	-.03	.04	.06	.04	.01	-.21	.06	.07	.11
10	.20	.40*	.38*	-.22	-.38*	-.32**	.32**	.438	.39*
11	.33**	.39*	.33*	-.43*	-.41*	-.28	.32**	.43*	.41*
12	-.07	.03	.12	.10	-.05	-.04	-.07	.06	.11
13	.11	.24	.26	-.07	-.31*	-.27	.22	.41*	.25
14	.34**	.34**	.28	-.32**	-.45*	-.30**	.35*	.39*	.29
15	.38*	.25	.28	-.30**	-.26	-.37*	.26	.22	.24
16	-.01	.31*	.19	-.16	-.22	-.25	.28	.37*	.33**
17	.31**	.42*	.38*	-.41*	-.45*	-.40*	.36*	.52*	.38*
18	.09	-.01	-.08	.09	.02	.07	-.06	-.05	-.19
19	.14	.19	.26	-.26	-.20	-.22	.23	.27	.28
20	.09	.08	.14	-.16	-.17	-.16	.21	.22	.18
21	.19	.06	.08	-.22	-.20	-.13	.22	.11	.12
22	.21	.21	.29**	-.22	-.36*	-.38*	.31**	.34*	.35*
23	.29	.40*	.47*	-.37*	-.56*	-.55*	.37*	.58*	.49*
24	.26	.33*	.24	-.31**	-.36*	-.35*	.45*	.37*	.36*
25	.27	.34*	.37*	-.45*	-.45*	-.38*	.57*	.41*	.51*
26	.13	.35*	.43*	-.30**	-.43*	-.45*	.35*	.48*	.41*
27	.05	.21	.18	-.14	-.28**	-.09	.22	.30**	.23
28	.27	.20	.24	-.24	-.35*	-.33**	.23	.32*	.35*
29	.17	.04	.10	-.17	-.07	.05	.14	-.05	-.06
30	.05	.10	.16	-.27	-.25	-.20	.10	.07	.09
31	.00	-.03	.09	-.13	-.08	-.08	.10	.07	.09
32	.25	.44*	.43*	-.39*	-.47*	-.44*	.45*	.54*	.43*
33	.19	.34*	.33**	-.20	-.37*	-.30**	.27	.50*	.42*
34	.34*	.35*	.49*	-.40*	-.42*	-.55*	.42*	.48*	.51*
Verbal Total	.33*	.43*	.47*	-.45*	-.44*	-.46*	.48*	.54*	.55*
Nonverbal Total	.33**	.41*	.50*	-.47*	-.57*	-.56*	.53*	.59*	.61*

\*p &lt; .0001

\*\*p &lt; .001

\*\*\*S = Small, M = Medium, L = Large

outside of class. In addition, a teacher's self-disclosure ("uses personal examples or talks about experiences she/he has had outside of class"); asking questions or encouraging students to talk; asking questions that solicit viewpoints or opinions; following up on student-initiated topics ("gets into discussions based on something a student brings up even when this doesn't seem to be a part of his/her lecture plan"); reference to class as "our" class and what "we" are doing; provision of feedback on students' work; asking how students feel about assignments, due dates, or discussion topics; and invitations for students to telephone or meet with him/her outside of class if they have questions or want to discuss something all contribute meaningfully to student-reported cognitive and affective learning. As reported in previous research

(Richmond, Gorham & McCroskey, 1986), these data also reinforce the particular importance of a teacher's vocal expressiveness, smiling, and relaxed body position—as well as gestures, eye contact, movement around the classroom and, to some degree, touch—as nonverbal immediacy behaviors significantly associated with students' perceptions of learning (Table 2).

When analyzed by class size, the importance of humor; teacher conversations with individual students before, after, or outside of class; feedback; invitations for students to telephone or meet with the teacher outside of class; and praise were relatively

TABLE 4  
VARIANCE ACCOUNTED FOR BY TOTAL VERBAL AND NONVERBAL IMMEDIACY SCORES

Learning Measure		Enrollment			Overall
		1-25	26-50	51+	
Learning	VAF*	14.4	21.1	29.1	19.3
	V	3.6	4.3	3.7	2.6
	NV	3.4	2.8	6.8	5.2
	C	7.4	14.0	18.5	11.5
Learning Loss	VAF	28.3	33.6	33.3	31.4
	V	6.0	.6	1.8	1.8
	NV	8.0	14.1	11.9	12.4
	C	14.3	18.9	19.6	17.2
Attitude: Content	VAF	7.9	22.3	24.8	17.3
	V	0	4.2	.7	.8
	NV	5.9	3.3	10.5	7.1
	C	2.0	14.8	13.6	9.4
Attitude: Behaviors Recommended	VAF	18.1	24.6	23.2	23.0
	V	2.3	2.4	.4	1.8
	NV	7.0	6.2	10.4	8.2
	C	8.8	16.0	12.4	12.9
Attitude: Instructor	VAF	39.7	39.2	38.4	38.1
	V	7.9	1.3	1.3	2.0
	NV	11.7	14.7	15.4	15.5
	C	20.1	23.2	21.7	20.6
Behavioral Intent: Behaviors Recommended	VAF	15.0	23.7	18.2	19.9
	V	7.9	3.3	4.8	5.2
	NV	.7	4.7	1.9	2.8
	C	6.4	15.7	11.5	11.9
Behavioral Intent: Course Enrollment	VAF	12.5	16.9	24.3	18.2
	V	1.2	2.0	5.9	2.7
	NV	5.4	3.8	2.9	4.6
	C	5.9	11.1	15.5	10.9
Behavioral Intent: Teacher Enrollment	VAF	37.0	40.0	40.1	35.3
	V	7.1	3.4	4.8	3.3
	NV	11.2	8.5	9.8	11.6
	C	18.7	22.1	25.4	20.4
Attitude: Overall	VAF	28.1	36.9	37.2	34.4
	V	3.2	3.1	1.0	2.0
	NV	11.4	10.1	15.6	13.6
	C	13.4	23.7	20.6	18.8
Behavioral Intent: Overall	VAF	30.1	35.0	38.0	34.6
	V	7.0	4.0	7.2	5.0
	NV	8.1	8.0	6.3	8.8
	C	15.7	23.0	24.4	20.8
Total Affect	VAF	34.2	39.3	41.2	38.5
	V	6.1	3.9	4.3	4.0
	NV	10.9	9.7	10.9	12.0
	C	17.2	25.7	26.0	22.5

\*VAF = variance accounted for (R Squared); V = Verbal total score; NV = Nonverbal total score; C = Colinearity.

TABLE 5  
MEANS OF IMMEDIACY AND LEARNING ITEMS\*

Item Number	Enrollment			Total
	1-25	26-50	51+	
1	2.4	2.1	1.9	2.1
2	3.0	2.6	2.0	2.5
3	2.3	1.9	1.5	1.9
4	2.4	2.4	2.3	2.3
5	3.1	2.2	.9	2.1
6	2.9	1.9	.6	1.8
7	2.6	2.4	2.1	2.4
8	1.9	1.3	.8	1.3
9	1.8	1.5	1.4	1.6
10	2.5	2.3	2.1	2.3
11	2.6	2.0	1.0	1.9
12	2.1	1.5	.8	1.5
13	2.3	1.9	1.2	1.8
14	2.3	2.1	2.2	2.2
15	2.5	2.5	2.3	2.5
16	2.5	2.2	1.6	2.1
17	2.3	2.1	1.5	2.0
18	2.2	1.5	1.2	1.6
19	1.8	1.7	1.2	1.6
20	1.4	1.3	.5	1.1
21	3.1	3.3	3.6	3.3
22	2.9	2.9	2.8	2.8
23	2.9	2.7	2.6	2.8
24	3.6	3.4	3.4	3.5
25	3.0	2.9	2.7	2.9
26	3.0	2.9	3.0	2.9
27	.7	.6	.4	.6
28	2.4	2.5	2.1	2.3
29	2.4	2.8	3.6	3.0
30	2.5	2.2	2.2	2.3
31	2.8	2.6	2.2	2.5
32	2.9	2.9	2.9	2.9
33	2.3	2.3	1.7	2.1
34	2.7	2.7	2.4	2.6
Verbal Total	40.5	33.8	24.1	32.9
Nonverbal Total	34.8	33.9	32.0	33.6
Teacher Talk (%)	69.3	83.4	91.0	81.3
Learning	6.0	5.8	5.8	5.9
Learning Loss	1.4	1.5	1.8	1.5
Attitude	66.1	64.3	62.9	64.4
Behavioral Intent	59.9	58.7	54.6	57.8
Total Affect	126.0	123.0	117.5	122.2

\*Scale for Items 1-34: 0 = Never 1 = Rarely 2 = Occasionally 3 = Often 4 = Very Often

consistent across enrollments. A second set of behaviors, however, tend to increase in value as class size increases: teacher self-disclosure, asking questions or encouraging students to talk, and referring to class as "our" class or what "we" are doing become progressively more strongly related to both perceived learning and affective measures as class size increases; addressing students by name and asking questions that solicit student viewpoints or opinions follow the same pattern, particularly for affective learning. The differentiation in relative value of these behaviors is particularly apparent when comparing small (1-25 students) to mid-sized (26-50 students) classes. It is likely that the physical closeness of teachers and students in small classes

enhances perceptions of immediacy and fosters an atmosphere in which behaviors in the second set are relatively common. As class size increases, however, teachers become more differentiated in terms of their efforts to decrease psychological distance. A similar pattern emerges for nonverbal immediacy behaviors. Eye contact, smiling, and vocal expressiveness are important teacher behaviors regardless of class size, whereas gesturing, smiling at individual students, relaxed body position, and movement around the classroom become more important factors as class size increases (Table 3). Taken together, these data indicate an enhanced responsibility of teachers in larger classes to utilize specific verbal and nonverbal approach behaviors, strategies which reduce psychological distance between teachers and their students and are likely to affect learning outcomes. It is interesting to note that verbal immediacy is a quality not necessarily related to reported quantity of teacher vs. student talk.

Analysis by teacher gender indicated that female teachers were somewhat more likely than male teachers ( $p < .01$ ) to provide feedback; to ask how students feel about an assignment, due date, or discussion topic; to ask questions that solicit opinions or viewpoints; and to praise students' work, actions, or comments. Females were also substantially ( $p < .001$ ) more likely to touch students and to smile, findings which are consistent with gender differences reflected throughout the nonverbal literature. While female teachers were found to be somewhat more immediate than males, the differences on the majority of the immediacy variables were not significant and we cannot conclude that teacher gender is related to either immediacy or student learning in any particularly meaningful way.

The combination of verbal and nonverbal immediacy behavior accounted for 38.5% of the variance in overall affect and over 35% of the variance in attitude toward the instructor and reported likelihood of enrolling in another course with the same instructor. The relationships of teacher immediacy behaviors to attitude about the behaviors recommended and likelihood of engaging in those behaviors, and to attitude about the course content and likelihood of enrolling in another course of related content, were also substantial, with verbal and nonverbal immediacy accounting for between 17 and 23% of the variance in each of these measures. The combined verbal and nonverbal immediacy scores also accounted for 19.3% of the variance in perceived amount of cognitive learning and 31.4% of the variance in learning loss. In most cases, the nonverbal measure accounted for a greater portion of unique variance than did the verbal measure; however, in all but two cases, the greatest contribution to variance accounted for was colinearity (Table 4).

In general, the variance accounted for by verbal and nonverbal immediacy behaviors increased as class size increased, with slightly larger increases between small and mid-sized classes than between mid-sized and large classes. The variance accounted for in attitude toward course content showed a substantial increase between small (7.9%) and mid-sized (23.7%) classes.

The means for nonverbal items, except for touch, were higher than those for the verbal items (Table 5), probably reflecting the continuous vs. discontinuous nature of nonverbal as opposed to verbal behaviors. Reported use of both verbal and nonverbal immediacy behaviors, except for teacher mobility, tended to decrease as class size increased, with the most substantial decreases in feedback and teacher use of student names between mid-sized and large classes.

We thus conclude that teacher immediacy behaviors, both verbal and nonverbal, are significantly related to student learning, these behaviors are used less often in

larger classes, and the impact of differential use of immediacy behaviors on learning is coincidentally enhanced as class size increases.

The verbal immediacy items identified in this study are intuitively compatible with Mehrabian's (1981) approach-avoidance metaphor. Teachers who exhibit these behaviors reduce psychological distance by recognizing individual students and their ideas and viewpoints, by incorporating student input into course and class design, by communicating availability and willingness to engage in one-to-one interactions, and by enhancing their "humanness" via humor and self-disclosure. The variety provided by using both verbal and nonverbal immediacy behaviors identified here is likely to contribute to arousal and the student-centered approach implied by several of the verbal immediacy messages is likely to reduce feelings of submissiveness on the part of students. As noted previously, approach or immediacy in a relationship increases liking, arousal increases liking, and submissiveness decreases liking despite large variations in pleasure, arousal, or both (Mehrabian, 1981). Within this frame, the relationship of verbal (and nonverbal) teacher immediacy behaviors to affective learning which is supported by this study is patently logical.

The relationship of the verbal immediacy behaviors identified here to students' estimates of how much they learned can be related to earlier studies (e.g., Flanders, 1960; Cogan, 1956) which found more learning in student-centered than teacher-centered classes, and to Amidon and Giammatteo's (1967) differentiation of "master" and average teachers in terms of verbal behaviors such as acceptance of student feelings, response to student-initiated talk, praise, and tendency to ask open rather than narrowly focused questions. McCarthy and Schmeck (1981) found teacher self-disclosure and self-reference significantly related to free recall of information, particularly among male students who were presumed better able to identify with the self-disclosures of the male teacher used in the experiment.

What has been missing from much of the instructional research of this type has been an effort to interrelate findings into a single process-product model. It has been suggested (e.g., Solomon, Bezdek & Rosenberg, 1963) that the uncertainty about factors influencing effective teacher-student interactions is a result not of a lack of research but of a lack of ability to make sense of individual findings within a common frame. This study's focus on verbal teacher behaviors adds additional low-inference variables to those identified previously (Richmond, et. al, 1985, 1986; Plax, et. al, 1986) as immediacy behaviors associated with increased learning at the college level. As such, it provides further empirical clarification of a single process-product model which might have considerable prescriptive value in teacher training and evaluation.

## REFERENCES

- Andersen, J. F. (1979). Teacher immediacy as a predictor of teaching effectiveness. In D. Nimmo (Ed.), *Communication Yearbook 3* (pp. 543-559). New Brunswick, NJ: Transaction Books.
- Andersen, J. F. (1978). The relationship between teacher immediacy and teaching effectiveness. Unpublished doctoral dissertation, West Virginia University, Morgantown, WV.
- Amidon, E. J. & Giammatteo, M. (1967). The verbal behavior of superior elementary teachers. In E. J. Amidon & J. B. Hough (Eds.), *Interaction Analysis: Theory, research and application* (pp. 186-188). Reading, MA: Addison-Wesley.
- Bradac, J. J., Bowers, J. W. & Courtright, J. A. (1979). Three language variables in communication research: Intensity, immediacy, and diversity. *Human Communication Research, 5*, 257-269.
- Cogan, M. L. (1956). Theory and design of a study of teacher-pupil interaction. *Harvard Educational Review, 26*, 315-342.

- Conville, R. L. (1974). Linguistic nonimmediacy and communicators' anxiety. *Psychological Reports*, 35, 1107-1114.
- Flanders, N. A. (1960). Some relationships among teacher influence, pupil attendance, and achievement. In E. J. Amidon & J. B. Hough (Eds.), *Interaction analysis: Theory, research and applications* (pp. 217-242). Reading, MA: Addison-Wesley.
- McCarthy, P. R. & Schmeck, R. R. (1981, May). Effects of teacher self-disclosure on student learning and perceptions of teacher. Paper presented at the annual meeting of the Midwestern Psychological Association, Detroit. (ERIC Document Reproduction Service No. ED 205 864).
- McDowell, E. E., McDowell, C. E. & Hyerdahl, J. (1980, November). A multivariate study of teacher immediacy, teaching effectiveness and student attentiveness at the junior and senior high levels. Paper presented at the annual meeting of the Speech Communication Association, New York.
- McCroskey, J. C., Richmond, V. P., Plax, T. G. & Kearney, P. (1985). Power in the classroom V: Behavior alteration techniques, communication training and learning. *Communication Education*, 34, 214-226.
- Mehrabian, A. (1981). *Silent messages: Implicit communication of emotions and attitudes*. Belmont, CA: Wadsworth.
- Mehrabian, A. (1967). Attitudes inferred from nonimmediacy of verbal communication. *Journal of Verbal Learning and Verbal Behavior*, 6, 294-295.
- Milton, O., Pollio, H. R. & Eison, J. A. (1986). *Making sense of college grades*. San Francisco: Jossey-Bass.
- Plax, T. G., Kearney, P., McCroskey, J. C. & Richmond, V. P. (1986). Power in the classroom VI: Verbal control strategies, nonverbal immediacy and affective learning. *Communication Education*, 35, 43-55.
- Richmond, V. P., Gorham, J. S. & McCroskey, J. C. (1987). The relationship between selected immediacy behaviors and cognitive learning. In M. McLaughlin (Ed.), *Communication Yearbook 10* pp. 574-590. Beverly Hills, CA: Sage.
- Richmond, V. P., McCroskey, J. C., Kearney, P. & Plax, T. G. (1985, November). Power in the classroom VII: Linking behavior alteration techniques to cognitive learning. Paper presented at the annual meeting of the Speech Communication Association, Denver.
- Simon, A. & Boyer, E. G. (1974). *Mirrors for behavior III: An anthology of observation instruments*. Wyncote, PA: Communication Materials Center.
- Solomon, D., Bezdek, W. E. & Rosenberg, L. (1963). *Teaching style and learning*. Chicago: Center for the Study of Liberal Education for Adults.
- Sorrentino, R. M. & Boutillier, R. G. (1975). The effect of quantity and quality of verbal interaction on ratings of leadership ability. *Journal of Experimental Research in Personality*, 11, 403-411.
- Stang, D. J. (1973). Effect of interaction rate on ratings of leadership and liking. *Journal of Personality and Social Psychology*, 27, 405-408.
- Wiener, M. & Mehrabian, A. (1968). *Language within language: Immediacy, a channel in verbal communication*. New York: Appleton-Century-Crofts.

