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Personality, Classroom Behavior, and Student Ratings of College Teaching Effectiveness: A Path Analysis

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This study tested the hypothesis that classroom teaching behavior mediates the relation typically found between personality and college teaching effectiveness. Colleagues rated 37 full-time college instructors on 29 personality traits, and trained observers assessed the frequency with which the same instructors exhibited 95 specific classroom teaching behaviors. Instructional effectiveness was measured by global end-of-term student ratings averaged over a 5-year period. Path analyses revealed that approximately 50% of the relation between personality and teaching effectiveness was mediated by classroom behavior. Results are discussed in terms of the validity of student ratings of teaching and in relation to Dunkin and Biddle's (1974) model of classroom teaching.

Student ratings are currently the most widely used measure of teaching effectiveness in North American colleges and universities. Seldin (1980) reported that 95% of liberal arts colleges considered student ratings in the evaluation of teaching performance. Moreover, reviews by McKeachie (1979), Murray (1980), and Marsh (1984) concluded that student evaluations can provide reliable and valid information on certain aspects of college teaching effectiveness. Evidence for the validity of student ratings includes the fact that ratings show relatively low correlations with extraneous variables such as class size and severity of grading and relatively high correlations with objective measures of student achievement (Cohen, 1981), and with theoretically relevant instructor characteristics such as personality traits and classroom behaviors. The latter teacher attributes were classified by Dunkin and Biddle (1974) as "presage" and "process" variables, respectively.

Personality and Teaching Effectiveness

Teacher personality traits have often been hypothesized to be associated with student evaluations of college teaching. Although several early investigations using instructor's self-reports of personality failed to support this belief (e.g., Bendig, 1955; Sorey, 1968), more recent studies in which personality was measured by methods other than self-report yielded positive results. Colleague ratings of teacher personality have been shown to relate to student evaluations of teaching, with the effective teacher perceived as showing leadership, objectivity, low anxiety, and extraversion (Murray, 1975); extraversion and task orientation (Murray, 1978); and leadership, extraversion, supportiveness, objectivity, and nonauthoritarianism (Rushton, Murray, & Paunonen, 1983). Student ratings of teacher personality also have been shown to relate to student evaluations of teaching, with the effective teacher perceived as showing ascendency, responsibility, emotional stability, sociability, original thinking, personal relations, and vigor (Costin & Grush, 1973); dynamism, pragmatism, amicability, and high intelligence (Sherman & Blackburn, 1975); and affiliation, achievement, endurance, nurturance, understanding, changeability, and extraversion (Tomasco, 1980).

In sum, a reasonably consistent pattern of personality characteristics associated with student ratings of college teaching has emerged from research. The highly rated teacher is perceived by faculty peers and by students as showing leadership, objectivity,

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and high intellect on the one hand and supportiveness, extraversion, and emotional stability on the other. Due to the correlational nature of the research, however, causal interpretations have been made with difficulty. Rushton, Murray, and Paunonen (1983) suggested that a reciprocal causal interaction may exist in which success and reinforcement at teaching fosters a "teacher personality," which in turn leads to greater success in the classroom. They pointed out, however, that there are good reasons for believing that the direction of causality is primarily from personality traits to teaching effectiveness rather than vice versa. Implicit in the notion of personality trait is the idea of cross-situational and longitudinal stability of behavior (Allport, 1937; Guilford, 1959; Jackson & Paunonen, 1980), which makes it likely that an instructor's traits influence his or her teaching effectiveness.

Classroom Behavior and Teaching Effectiveness

Several studies reported correlations between student ratings of instructors' specific classroom behaviors and student ratings of overall teaching effectiveness. For example, Mintzes (1979) found that highly rated psychology instructors showed behaviors such as speaking expressively or emphatically, giving a preliminary overview of the lecture, using multiple examples of concepts, and addressing students individually by name. Other studies showed that student rating were predictable from behaviors reflecting enthusiasm and interaction (Solomon, 1966); motivation of students, structuring of course material, skilled presentation, and mastery of subject content (Deshpande, Webb, & Marks, 1970); and consideration and competence (Keaveny & McGann, 1978). Because students assessed both classroom behavior and teaching effectiveness in these investigations, it is possible that correlations obtained were due in part to judgement biases such as a "halo effect." Similar results occurred, however, when behavior and effectiveness were independently assessed. Murray (1983), for example, using trained observers' ratings of classroom teaching behavior, identified specific behaviors reflecting enthusiasm, clarity, and rapport that were positively related to student evaluations of overall teaching effectiveness. Similarly, Cranton and Hillgartner (1981) reported a variety of relations between student instructional ratings and behavioral frequency counts derived from videotapes of classroom teaching.

The classroom behaviors found to correlate positively with student ratings of teaching effectiveness seem to fall into two general categories: those that convey enthusiasm and/or rapport and thereby elicit student interest and participation (charismatic behaviors); and those that reflect preparation, structuring of materials, and clear exposition of concepts (organizational behaviors). Charismatic behaviors include speaking expressively, relating material to students' interests, and use of movement and gesture. Organizational behaviors include giving a preliminary overview, stating objectives, and using headings. It is interesting to note that Frey (1978) arrived at a similar two-dimensional model of college teaching effectiveness through factor analysis of behaviorally oriented student rating forms.

Although causal interpretations again are restricted by the correlational nature of the research, two considerations support the hypothesis that classroom teaching behavior determines student ratings of teaching effectiveness. First, the normal temporal precedence of teaching behavior to teaching evaluation is consistent with such a hypothesis. Second, and more important, there is experimental evidence supporting a causal relation between teacher behaviors and student ratings. For example, Murray and Lawrence (1980) reported that teachers trained on specific classroom behaviors such as vocal variation and expressive movement obtained significantly higher student ratings than did control teachers.

Personality and Classroom Behavior of Effective Teachers

Given that both personality traits and classroom behaviors appear to influence student evaluations of teaching, the present hypothesis was that these instructor characteristics are themselves related, such that classroom behavior mediates the influence

of personality on teaching effectiveness. Several considerations support such an interpretation. First, many conceptualizations of personality view traits as hypothetical constructs inferred from prototypic behaviors. From this perspective, the effect of a teacher's personality on student ratings (or any other criterion) must be mediated by his or her behavior. Given that student–teacher contact is largely restricted to classroom settings, this behavior is most likely to be classroom behavior. Second, theorists in educational psychology (e.g., Dunkin and Biddle, 1974) have proposed models of classroom teaching in which "presage" variables, such as teacher personality traits, determine "process" variables, such as specific classroom behaviors, which in turn determine "product" variables, such as student evaluations of teacher effectiveness. A final consideration stems from the empirical data presented above. An intuitive congruence appears to exist between the types of personality traits and the types of classroom behaviors found to be associated with student ratings of teaching effectiveness. For example, charismatic classroom behaviors might be expected to correlate with personality traits such as extraversion and supportiveness, whereas organizational classroom behaviors might be expected to correlate with traits such as orderliness and leadership. In light of these considerations, a causal model in which classroom behavior mediated the effect of personality on teaching effectiveness was constructed. Path analytic techniques were used to test the adequacy of this model.

Table 1
Peer Rating of Personality Traits: Reliability and Correlation With Student Instructional Ratings

Personality trait	Reliability of mean rating[a]	Correlation with student ratings
Meek	.83	−.08
Ambitious	.92	.35*
Sociable	.89	.52*
Aggressive	.88	.03
Independent	.71	.18
Changeable	.74	.46*
Seeks definiteness	.85	.12
Defensive	.77	−.30*
Dominant	.93	.35*
Enduring	.91	.42*
Attention-seeking	.94	.50*
Harm-avoiding	.83	−.41*
Impulsive	.89	.20
Supporting	.86	.43*
Orderly	.61	.40*
Fun-loving	.90	.39*
Aesthetically sensitive	.72	.34*
Approval-seeking	.78	.32*
Seeks help and advice	.76	.11
Intellectually curious	.74	.46*
Anxious	.80	−.33*
Intelligent	.88	.36*
Liberal	.88	.55*
Shows leadership	.92	.57*
Objective	.81	.40*
Compulsiveness	.70	.26
Authoritarian	.72	−.32*
Extraverted	.88	.51*
Neurotic	.65	−.22

[a]Based on an average of 10.51 raters.
*$p < .05$.

Method

Subjects

The sample of teachers consisted of 35 male and 2 female full-time faculty members of varying rank, each of whom had taught for at least 3 years in the department of psychology at University of Western Ontario. Because of the small number of women, all analyses were collapsed across sex.

Measures of Personality

All faculty members in the department, including those participating in the study, were mailed a set of 29 trait adjective names (see Table 1), along with trait definitions and instructions on how to rate several named colleagues on 9-point scales. The instructions emphasized that ratings were to be based solely on personal observation and were to be made relative to other university professors rather than to other people in general. Twenty of the traits were adapted from the Personality Research Form (PRF; Jackson, 1974), an omnibus personality inventory based on H. A. Murray's (1938) need definitions. Two traits, extraversion and neuroticism, represented scales on the Eysenck Personality Questionnaire (EPQ; Eysenck & Eysenck, 1975). Another seven dimensions were selected because they were found to be useful in H. G. Murray's (1975) study of personality and college teaching. Between 8 and 15 faculty peers ($M = 10.51$) assessed each participating faculty member on the 29 personality traits.

Measures of Classroom Teaching Behavior

Each of the 37 professors was observed during three separate 1-hr class periods by each of 3 to 11 trained classroom observers (M = 6.41). Thus, faculty members were observed for an average of 19.23 hr each over a period of approximately 3 months. The observers, students enrolled in an educational psychology course, were randomly assigned to teachers. Prior to visiting classes, observers were given approximately 4 hr of group training in recording classroom behaviors from videotaped lecture segments. The instructors had given written permission for classroom observation to occur, but did not know when student observers would be present. The observers summarized their 3 hr of observation of each teacher on a standardized behavioral rating form developed by H. G. Murray (1983) that was called the Teacher Behaviors Inventory and comprised 95 specific classroom behaviors (see Table 2 for partial list) rated on 5-point frequency of occurrence scales.

Measure of Teaching Effectiveness

Formal end-of-course student evaluations of instructors are required in all courses at the University of Western Ontario. In the department of psychology, students evaluate teachers on ten 5-point rating scales, assessing various aspects of classroom performance. The last item, "How would you rate your instructor in terms of general, overall effectiveness as a teacher?", was used as the criterion of teaching effectiveness. Overall effectiveness ratings were averaged over all undergraduate courses taught over the past 5 years (M = 10.73 courses per teacher) to obtain a single measure of teaching effectiveness for each professor. A split-half reliability coefficient of .91 was obtained for this measure by correlating mean student ratings from odd- and even-numbered courses across all professors and correcting the resulting correlation by the Spearman-Brown formula.

Results

Reliability of Personality and Classroom Behavior Ratings

Split-half reliabilities were computed for each of the personality traits by correlating mean ratings of odd- and even-numbered judges across all professors and correcting resulting correlations by the Spearman-Brown formula. As shown in Table 1, mean rater reliabilities for the 29 personality traits ranged from .61 to .94 (M = .82), indicating considerable agreement among faculty peers in their ratings of colleagues.

Split-half reliabilites, corrected by the Spearman-Brown formula, also were computed for each of the 95 classroom behaviors. Because of the relatively small number of observers rating some professors (as few as 3), the reliability of 46 of the 95 classroom teaching behaviors was too low (below .50) to justify inclusion in subsequent statistical analyses. As seen in Table 2, the remaining 49 classroom behaviors had moderate reliabilities ranging from .50 to .86, with a mean of .64.

Relation of Personality and Classroom Behavior to Teaching Effectiveness

Mean peer ratings of 21 of the 29 personality traits correlated significantly with student ratings of teaching. As shown in Table 1, the significant correlations ranged in magnitude from .30 to .57, with an average of .42. As in previous research, the highly evaluated teacher was characterized by traits such as leadership, objectivity, extraversion, supportiveness, emotional stability, high intellect, ambition, endurance, and dominance.

Mean observer ratings of 26 of the 49 classroom behaviors also correlated significantly with student ratings. As shown in Table 2, significant correlations ranged in magnitude from .27 to .66 (M = .44). Again results corresponded to those of earlier research. The effective instructor exhibited two general types of classroom teaching behavior: one reflecting charisma and exemplified by behaviors such as speaking expressively, use of humor, relating subject matter to student interests, and encouraging student participation; and the other reflecting organization and exemplified by behaviors such as giving a preliminary overview, using headings to organize material, and giving multiple examples of concepts.

Construction of Composite Personality and Classroom Behavior Dimensions

The next step in data analysis was the construction of composite personality and classroom behavior dimensions for use in subsequent analyses. Aggregation of individual personality traits and classroom behaviors into composite dimensions provides

Table 2
Observer Ratings of Classroom Behavior: Reliability and Correlation With Student Instructional Ratings

Behavior	Reliability of mean rating[a]	Correlation with student ratings
Gestures with hands or arms	.61	.29*
Plays with chalk or pointer	.59	.00
Exhibits facial gestures	.68	.27*
Avoids eye contact	.57	−.45*
Smokes or drinks while teaching	.71	.17
Leans on desk or lectern	.63	−.15
Smiles or laughs while teaching	.74	.31*
Speaks in an expressive way	.63	.57*
Stutters, mumbles, or slurs words	.65	−.33*
Speaks in a monotone	.60	−.57*
Does not speak clearly	.68	−.38*
Gives multiple examples of concepts	.51	.41*
Fails to define new terms	.64	−.42*
Uses audiovisual aids	.86	−.16
Uses graphs or diagrams	.75	.14
Uses headings to organize lecture	.77	.36*
Relates lecture to readings	.60	−.01
Puts outline on blackboard	.76	.17
Lecture follows logical sequence	.52	.66*
Covers little material in lecture	.55	−.53*
Gives preliminary overview of lecture	.70	.33*
Organizes lecture with points	.58	.30*
Provides outline of the course	.56	.05
Tells jokes or humorous anecdotes	.71	.39*
Shows interest in subject matter	.56	.54*
Relates material to student interests	.60	.66*
Describes relevant personal experiences	.51	.14
Reads lecture from prepared notes	.58	−.17
Uses a variety of different activities	.75	.04
States own point of view	.53	.06
Focuses on controversial issues	.65	.19
Gives advice re tests or exams	.51	.34*
States objectives of lecture	.50	.38*
Suggests supplementary readings	.81	.20
Advises as to preparation for papers	.63	.18
Suggests mnemonic aids	.65	.26
Addresses students by name	.77	.01
Sensitive to student feelings	.57	.56*
Tolerant of other points of view	.50	.53*
Available for consultation	.65	.43*
Flexible regarding requirements	.80	.11
Offers to help students	.59	.14
Encourages questions or comments	.60	.17
Asks questions of students	.68	−.12
Encourages student participation	.66	.35*
Asks if students understand	.61	.26
Expects students to answer questions	.64	−.05
Encourages independent thinking	.61	.42*
Incorporates student ideas into lecture	.60	.43*

[a] Based on average of 6.41 raters.
*$p < .05$.

more reliable measures of these two classes of variables. Second, a much smaller ratio of independent variables to sample size was required to avoid unstable results in path analyses (see Kerlinger & Pedhazur, 1973). Finally, multicollinearity (i.e., intercorrelations above .80) within both personality and classroom behavior domains would have made the interpretation of regression and path analyses extremely difficult. Consequently, preliminary factor analyses were undertaken to identify underlying personality and classroom behavior dimensions of the effective university instructor.

Mean peer ratings of the 21 personality traits that correlated significantly with student evaluations of teaching were subjected to a principal-components factor analyses. Cattell's (1966) scree test of eigenvalues yielded a two-factor solution. The first two factors, accounting for 66.1% of the total variance in mean ratings, were rotated to a varimax criterion to aid in the interpretation of underlying personality dimensions. As shown in Table 3, 14 of the 21 traits loaded higher than .55 on one of the two rotated factors and lower than .40 on the other. Inspection of the factor loadings led to the interpretation of Factor 1 as an Achievement-Orientation dimension, and Factor 2 as an Interpersonal-Orientation dimension. A professor who scored high on Factor 1 would be characterized by dominance, ambition, leadership, intelligence, and endurance. A professor who scored high on Factor 2 would be characterized as nonauthoritarian, supportive, nondefensive, fun-loving, objective, and aesthetically sensitive. Professors were assigned factor scores on the two underlying personality dimensions by aggregating mean ratings for the personality traits loading higher than .55 on that dimension (and lower than .40 on the other). These criteria for inclusion were used to minimize the correlation between scores on the two personality composites. This step was necessary because highly correlated scores would restrict interpretation of the relative contribution of the two personality composites to the prediction of student instructional ratings and classroom behavior dimensions. Alpha coefficients for the Achievement Orientation and Interpersonal Orientation composites were .94 and .89, respectively, indicating considerable unidimensionality in each case. Professors' scores on the Achievement Orientation and Interpersonal Orientation composites were found to correlate .27 with each other and .51 and .45, respectively, with student ratings of teaching.

Table 3
Results of Principal-Components Factor Analysis of the 21 Predictive Personality Traits, Rotated to a Two-Factor Varimax Solution

Personality trait	Loadings: Factor 1	Loadings: Factor 2
Dominant	.93	−.15
Ambitious	.92	.03
Shows leadership	.87	.30
Intelligent	.86	.11
Enduring	.84	−.01
Intellectually curious	.80	.21
Attention-seeking	.77	.32
Harm-avoiding	−.59	−.25
Authoritarian	.02	−.90
Supporting	.05	.85
Defensive	.06	−.79
Fun-loving	.33	.77
Objective	.11	.72
Aesthetically sensitive	.10	.66
Sociable	.44	.79
Extraverted	.57	.64
Changeable	.59	.68
Liberal	.46	.84
Approval-seeking	.44	.42
Orderly	.31	−.46
Anxious	−.25	−.48

Note. Boxes indicate traits defining a given factor.

Mean observer ratings of the 26 predictive classroom behaviors also were subjected to a principal-components factor analysis. Again, a scree test yielded a two-factor solution. The first two factors, accounting for 50.5% of the total variance in mean ratings, were rotated to a varimax criterion. As shown in Table 4, 21 of the 26 classroom behaviors had loadings greater than .55 on one of the two rotated factors, and no variable loaded on more than one factor. Inspection of the factor loadings led to the interpretation of Factor 1 as a Charisma dimension and Factor 2 as an Organization

dimension. Professors who scored high on Factor 1 exhibited classroom behaviors such as speaking expressively, smiling or laughing while teaching, showing interest in the subject matter, and encouraging student participation. Professors who scored high on Factor 2 engaged in such classroom behaviors as giving a preliminary overview of the lecture, organizing the lecture with headings or points, and giving multiple examples of concepts. Professors were assigned factor scores on each of these dimensions by aggregating mean ratings of classroom behaviors loading .55 or higher on a given factor. Alpha coefficients for the Charisma and Organization composites were .93 and .88, respectively, indicating considerable unidimensionality in each of the classroom behavior composites. Factor scores on the Charisma and Organization dimensions correlated .45 with each other and .63 and .53, respectively, with student ratings of teaching.

Relations Among Personality Composites, Classroom Behavior Composites, and Student Ratings of Teaching Effectiveness

Zero-order correlations were computed between personality composites and classroom behavior composites. The Achievement Orientation personality composite was positively related to the Charisma classroom behavior composite (r = .42) but unrelated to the Organization composite (r = .13). The Interpersonal Orientation personality composite was positively related to both the Charisma (r = .42) and the Organization (r = .45) classroom behavior composite. These

Table 4
Results of Principal-Components Factor Analysis of the 26 Predictive Classroom Behaviors, Rotated to a Two-Factor Varimax Solution

Classroom behavior	Loadings: Factor 1	Loadings: Factor 2
Smiles or laughs while teaching	.88	−.05
Tells jokes or humorous anecdotes	.81	.05
Relates material to student interests	.77	.33
Shows interest in subject matter	.74	.23
Exhibits facial gestures	.69	−.03
Speaks in an expressive way	.67	.42
Speaks in a monotone	−.67	−.48
Gives advice re tests or exams	.67	.00
Sensitive to student feelings	.66	.32
Encourages independent thinking	.64	.21
Available for consultation	.59	.26
Encourages student participation	.59	.09
Avoids eye contact	−.57	−.28
Incorporates student ideas into lecture	.55	.24
Gives preliminary overview of lecture	−.02	.86
Organizes lecture with points	.01	.80
Lecture follows logical sequence	.33	.78
Uses headings to organize lecture	.16	.74
States objectives of lecture	.13	.72
Covers little material in lecture	−.08	−.69
Gives multiple examples of concepts	.43	.59
Gestures with hands or arms	.24	.26
Stutters, mumbles, or slurs words	−.49	−.11
Does not speak clearly	−.44	−.20
Fails to define new terms	−.53	−.47
Tolerant of other points of view	.30	.51

Note. Boxes indicate traits defining a given factor.

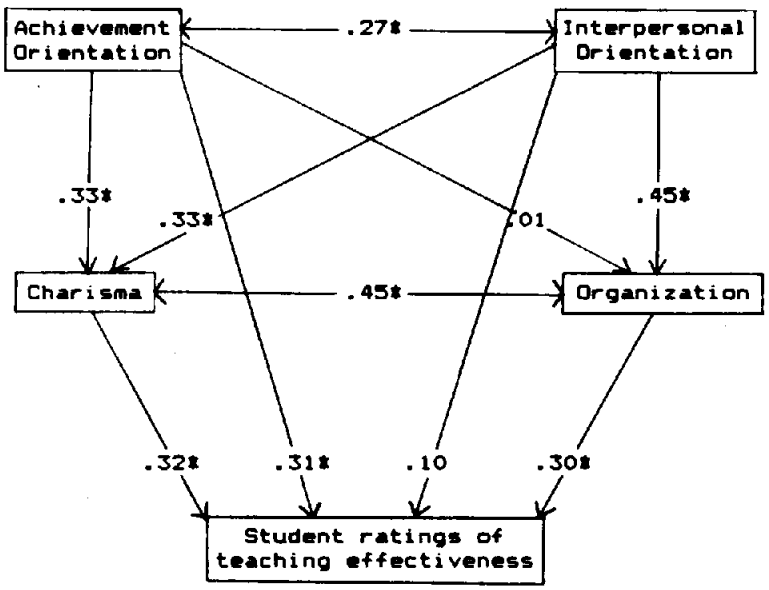

Figure 1. Path analysis of composite personality dimensions and classroom behavior dimensions in relation to student ratings of teaching effectiveness.

results show that there are significant relations between teacher personality and patterns of classroom behavior.

To test the proposed causal model that classroom behavior mediates the relation between personality and teaching effectiveness, a path analysis was undertaken using the personality and the classroom behavior composites as predictors and mean student ratings of teaching as the criterion. The results of this analysis are presented in Figure 1. The path coefficients are standardized beta weights derived from a series of multiple regression analyses (see Kerlinger & Pedhazur, 1973). Overall, the four predictors in the analysis accounted for 57% of the variance in student ratings of teaching effectiveness, $R(4, 32) = .75$, $p < .001$.

As explained below, 34% of the relation between the Achievement Orientation personality composite and perceived teaching effectiveness was found to be mediated by the two classroom behavior composites. Twenty-seven percent of the relation was mediated by Charisma, and 7% was mediated by Organization.

The percentage of the relation between Achievement Orientation and student ratings that was mediated by Charisma (27%) was the sum of two components. Twenty-one percent of the relation was directly mediated by Charisma. This percentage was obtained by multiplying the path coefficient between Achievement Orientation and Charisma (.33) by the path coefficient between Charisma and student ratings of teaching (.32) and dividing this product by the correlation between Achievement Orientation and student ratings (.51). The additional 6% of the effect mediated by Charisma was due to the correlation between Achievement Orientation and Interpersonal Orientation. This percentage is obtained by multiplying the correlation between the two personality composites (.27) by the path coefficient between Interpersonal Orientation and Charisma (.33) and the path coefficient between Charisma and student ratings of teaching (.32) and dividing this product by the correlation between Achievement Orientation and the criterion (.51).

Only 7% of the relation between Achievement Orientation and student ratings of teaching effectiveness was mediated by Organization. Through procedures identical to those described above, it can be seen that less than 1% of this relation was directly mediated by the classroom behavior composite, whereas the remainder was mediated

indirectly by the correlation between Achievement Orientation and Interpersonal Orientation.

Sixty-six percent of the relation between Achievement Orientation and the criterion of teaching effectiveness was found to be unmediated by the two classroom behavior composites. Sixty-one percent of the relation was a direct effect of Achievement Orientation on student ratings, whereas the additional 5% was a direct effect due to the correlation between the two personality composites. The direct effect percentage was obtained by dividing the direct path coefficient (.31) by the correlation between Achievement Orientation and the criterion (.51). The percentage of the relation that was a direct effect due to the correlation between the personality composites was obtained by multiplying the correlation between the two personality composites (.27) by the path coefficient between Interpersonal Orientation and the criterion (.10) and dividing by the correlation between Achievement Orientation and the criterion (.51).

Fifty-nine percent of the relation between the Interpersonal Orientation personality composite and rated teaching effectiveness was mediated by the two classroom behavior composites. Twenty-nine percent of the relation was mediated by Charisma, and 30% was mediated by Organization. These percentages were obtained in the same fashion as were those for Achievement Orientation. Twenty-three percent of the relation between Interpersonal Orientation and student ratings was directly mediated by Charisma (.33 × .32/.45), whereas 6% was mediated by Charisma because of the correlation between Interpersonal Orientation and Achievement Orientation (.27 × .33 × .32/.45). Thirty percent of the relation between Interpersonal Orientation and the criterion of teaching effectiveness was directly mediated by Organization (.45 × .30/.45); virtually none of the relation was indirectly mediated by Organization through Achievement Orientation (.27 × .01 × .30/.45).

Forty-one percent of the relation between Interpersonal Orientation and student ratings was unmediated by the classroom behavior composites. Twenty-two percent of the relation was a direct effect of Interpersonal Orientation (.10/.45), and the remaining 19% was a direct effect due to the correlation between Interpersonal Orientation and Achievement Orientation (.27 × .31/.45).

In sum, 59% of the relation between Interpersonal Orientation and student ratings of teaching was mediated by Charisma (29%) and Organization (30%), and 34% of the relation between Achievement Orientation and student ratings was mediated by Charisma (27%) and Organization (7%). Overall, therefore, 46.5% of the relation between the two personality composites and student ratings was mediated by the Charisma and Organization classroom behavior composites, 28% and 18.5%, respectively. It seems that an instructor who scored high on Achievement Orientation received high student ratings of teaching partly because he or she engaged in a high frequency of class-

Table 5
Correlations Between 21 Predictive Personality Traits and Two Classroom Behavior Dimensions

Personality trait	Classroom behavior dimension	
	Charisma	Organization
Dominant	.32*	−.02
Ambitious	.26	.03
Shows leadership	.48*	.31*
Intelligent	.29*	.11
Enduring	.27*	.14
Intellectually curious	.27*	.19
Attention-seeking	.58*	.12
Harm-avoiding	−.25	.08
Authoritarian	−.28*	−.32*
Supporting	.32*	.54*
Defensive	−.19	−.36*
Fun-loving	.47*	.23
Objective	.30*	.56*
Aesthetically sensitive	.44*	.14
Sociable	.48*	.36*
Extraverted	.56*	.24
Changeable	.48*	.19
Liberal	.48*	.37*
Approval-seeking	.40*	.27*
Orderly	.06	.33*
Anxious	−.23	−.11

* $p < .05$.

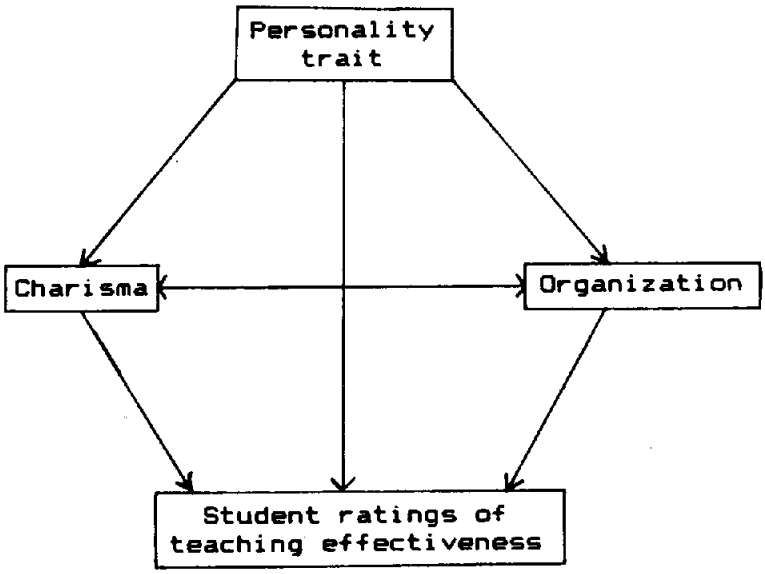

Figure 2. General form of causal model relating individual personality traits to student ratings of teaching effectiveness via the two classroom behavior composites.

room behaviors described as charismatic, whereas one who scored high on Interpersonal Orientation received high student ratings partly because he or she engaged in a high frequency of both charismatic and organizational classroom behaviors.

Analysis of Individual Personality Traits

Individual personality traits were analyzed to provide a more detailed interpretation of the relations identified above as well as to examine traits excluded from the path analysis, such as extraversion, orderliness, and anxiety. To further demonstrate that personality traits and classroom behaviors associated with teaching effectiveness are themselves related, zero-order correlations between the 21 predictive personality traits and the Charisma and Organization classroom behavior composites were computed. As can be seen in Table 5, 25 of 42 correlations were found to be significant at the .05 level, with coefficients ranging as high as .58. Charismatic classroom behavior was most strongly related to the personality traits of attention-seeking (.58), extraversion (.56), sociability (.48), leadership (.48), liberalness (.48), changeability (.48), and fun-lovingness (.47). Organizational behavior, on the other hand, was most strongly related to the traits of objectivity (.56), supportiveness (.54), liberalness (.37), defensiveness (−.36), sociability (.36), orderliness (.33), and authoritarianism (−.32).

Further path analyses were undertaken to test the causal model that classroom teaching behavior mediates the relation between specific personality traits and teaching effectiveness. In each of 21 separate path analyses, the predictor variables consisted of the two classroom behavior composites plus one of the 21 personality traits known to predict teaching effectiveness. Mean student ratings of teaching served as the criterion in all analyses. The analyses were conducted individually to provide an acceptable ratio of independent variables to the sample size. The general form of the causal model for these analyses is depicted in Figure 2.

Table 6 indicates the proportion of the relation between each of the personality traits and student ratings of teaching that was mediated by the Charisma and Organization classroom behavior composites. Overall, 50% of the relation between personality traits and effectiveness ratings was mediated by classroom behavior, with Charisma (34%) accounting for approxi-

Table 6
Estimated Direct and Mediated Effects of Personality on Student Ratings of Teaching Effectiveness in %

Personality trait	Effect			
	Direct	Charisma-mediated	Organization-mediated	Total mediated
Ambitious	63	32	05	37
Sociable	46	36	18	54
Changeable	46	40	14	54
Defensive	37	30	33	63
Dominant	66	34	00	34
Enduring	64	26	10	36
Attention-seeking	56	35	09	44
Harm-avoiding	85	15	00	15
Supporting	35	35	30	65
Orderly	78	05	17	22
Fun-loving	31	51	18	69
Aesthetically sensitive	29	57	14	71
Approval-seeking	19	57	24	81
Intellectually curious	65	24	11	35
Anxious	58	31	11	42
Intelligent	56	34	10	44
Liberal	49	33	18	51
Shows leadership	56	29	15	44
Objective	28	36	36	72
Authoritarian	31	41	28	69
Extraverted	45	39	16	55
Average	50	34	16	50

mately twice as much mediation as did Organization (16%). The direct effect of each personality trait on student ratings was estimated by dividing the path coefficient between the personality trait and student ratings by the correlation between these same two variables. The effects mediated by Charisma and Organization were calculated by multiplying the path coefficient between Charisma [Organization] and the criterion by the correlation between Charisma [Organization] and the personality trait and dividing this product by the correlation between the personality trait and student ratings. The obtained results further support the view that approximately 50% of the relation between personality and teaching effectiveness is mediated by specific classroom behaviors.

Discussion

The teacher personality traits and classroom teaching behaviors identified in the present study as significant correlates of student ratings of college instruction are in general agreement with results of previous research. The highly rated teacher was found to exhibit two types of personality traits: one type reflecting Achievement Orientation (e.g., dominance, intelligence, leadership) and the other reflecting Interpersonal Orientation (e.g., supportiveness, nonauthoritarianism, nondefensiveness). Similar personality traits were found to be associated with perceived teaching effectiveness in studies reported by Costin and Grush (1973); Murray (1975, 1978); Rushton, Murray, and Paunonen (1983); Sherman and Blackburn (1975); and Tomasco (1980). The highly rated teacher also was demonstrated to engage in two general types of classroom teaching behavior: one type reflecting Charisma (e.g., use of humor, encouraging participation) and the other reflecting Organization (e.g., using headings, stating objectives). Again, these results generally replicate the findings of previous

investigations (e.g., Cranton & Hillgartner, 1981; Frey, 1978; Mintzes, 1979; and Murray, 1983).

More important, the present findings support the hypothesis that personality traits and classroom behaviors are themselves related. The Interpersonal Orientation personality composite was found to be positively related to both the Charisma and Organization classroom behavior composites, and the Achievement Orientation personality composite was found to correlate positively with the Charisma composite. Additional evidence was provided by the fact that 25 of 42 simple correlations between individual personality traits and classroom behavior composites were significant, with coefficients ranging as high as .58. Instructors who engaged in a high frequency of charismatic classroom behaviors were rated by their colleagues as attention-seeking, extraverted, sociable, showing leadership, liberal, changeable, fun-loving, aesthetically sensitive, approval-seeking, supporting, dominant, objective, intelligent, nonauthoritarian, enduring, and intellectually curious. On the other hand, instructors who exhibited a high frequency of organizational classroom behaviors were perceived by faculty peers as objective, supporting, liberal, sociable, nondefensive, orderly, nonauthoritarian, showing leadership, and approval-seeking.

The proposed causal model in which personality influences teaching effectiveness via classroom behavior was also supported. Path analysis revealed that 46.5% of the relation between Achievement Orientation and Interpersonal Orientation on the one hand and rated teaching effectiveness on the other was mediated by the two classroom behavior dimensions. Fifty-nine percent of the relation between Interpersonal Orientation and teaching effectiveness was mediated by classroom behavior, with Organization and Charisma mediating approximately equal amounts of this relation. It appears, therefore, that teachers characterized by high levels of Interpersonal Orientation engaged in a high frequency of classroom behaviors reflecting Charisma and Organization and these behaviors in turn led to positive end-of-term evaluations from students. Thirty-four percent of the relation between Achievement Orientation and teaching effectiveness was shown to be mediated by classroom behavior. This effect was mediated primarily through Charisma, with Organization contributing to the relation only because of overlapping variance between the two personality composites. This suggests that teachers characterized by high levels of Achievement Orientation were positively evaluated by students partly because they exhibited classroom behaviors reflecting Charisma. Organizational behaviors, on the other hand, seemed to play virtually no role in mediating this relation. Athough instructors high in Achievement Orientation might have been expected to engage in a high frequency of Organizational classroom behaviors, it may be that the achievement-oriented instructors who participated in this study devoted more time to research than to preparation for teaching.

The path analyses undertaken to examine relations between individual personality traits and student ratings of teaching also provided evidence for mediation by classroom behavior. Overall, 50% of the shared variance in ratings of personality and teaching effectiveness was accounted for by charismatic and organizational classroom behaviors. Moreover, the pattern of mediation supported intuitive expectations. For example, the relation between the personality trait of orderliness and teaching effectiveness was mediated primarily by the Organization composite, whereas the relation between attention-seeking and teaching effectiveness was mediated primarily by the Charisma composite.

Several limitations of this research should be kept in mind. First, the small sample size restricted the complexity of causal models tested. Thus, the exact interpretation of which specific teaching behaviors mediated which specific personality traits was not possible. Second, the present findings may not generalize to methods other than the lecture method or to teaching content areas other than psychology. Finally, the correlational design of this research does not allow the direct interpretation of causality. It is possible that the causal model proposed here, which assumes that teacher personality influences student ratings of teaching effectiveness via classroom teaching behavior, is inaccurate. The plausibility of alternative

models, however, is reduced by theoretical considerations reviewed earlier, by the normal temporal precedence of personality to classroom behavior to student evaluations of teacher effectiveness, and by previous empirical evidence indicating a causal relation between classroom behaviors and student ratings (e.g., Murray & Lawrence, 1980).

In spite of possible drawbacks, this research has important implications for both the validity of student instructional ratings and the understanding of teaching at the university level. The finding that student ratings of overall effectiveness are related predictably to independently assessed personality traits and classroom behaviors of college instructors provides some evidence that student ratings converge with theoretically relevant variables. Several researchers (e.g., Small, Hollenbeck, & Haley, 1982) have claimed that student ratings are invalid because they are substantially influenced by the personality of the instructor. Contrary to this claim, the present study suggests that instructor personality is reflected in specific classroom teaching behaviors, which in turn are validly rated by students. In more general terms, the present research provides evidence supporting the pattern of relations proposed in Dunkin and Biddle's (1974) model of classroom teaching. It seems "presage" variables (teacher personality traits) lead to "process" variables (classroom behaviors), which in turn determine "product" variables (student evaluations of teaching). Given the present results, future research might test more complex models of college teaching effectiveness. Studies of this kind will further both the understanding of and the assessment of college instruction.

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At its February 2–3, 1985, meeting, the Council of Representatives voted to cease publication of *Psychological Documents* (formerly the Journal Supplement Abstract Service) as of December 31, 1985, with the publication of the December 1985 issue of the catalog. Continued low submissions, decreasing usage, and rising costs for fulfillment of paper and microfiche copies of documents were reasons given for discontinuing publication of the alternative format publication, which was begun in 1971 as an "experimental" publication.

Authors who wished to submit documents for publication consideration in 1985 were required to do so by July 1. Authors revising documents were required to complete all revisions and submit them for final review no later than July 1. Fulfillment of orders for paper and microfiche copies of documents presently in the system and of those documents entered during 1985 will continue through December 31, 1986.