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ABSTRACT

The objectives of this study were to determine whether teachers' personality characteristics affect their perceptions of stress and burnout and whether school climate interacts with personality factors to influence stress and burnout. A random sample of 162 teachers in nine junior high/middle schools completed a questionnaire measuring perceptions of: (1) stress; (2) burnout; (3) locus of control; (4) attitudes toward students; (5) intolerance of ambiguity or change; and (6) quality of the school as a work setting. The schools were selected because of evidence that they encompassed a wide range of school climate quality. Teachers reported a moderate to substantial amount of stress and burnout. The highest level of stress was generally reported in interpersonal situations, and the second highest level was reported in new situations. Teachers having negative attitudes and beliefs about students, an external locus of control, and low tolerance for ambiguity reported more stress and burnout than other teachers. These results suggest that preservice teacher education programs should focus on developing an internal locus of control, positive and realistic attitudes toward students, and tolerance of new situations. (Authors/FG)

PERSONALITY AND SITUATIONAL CORRELATES OF TEACHER STRESS AND BURNOUT

(A Report Based On a Dissertation Study Conducted at the University of Oregon)

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The purpose of this study was to identify correlates of teacher stress and burnout. Relationships among (1) teacher stress and burnout, (2) teacher personality, and (3) school climate were investigated. The primary objective of this study was to determine whether personality characteristics of teachers affect their perceptions of stress and burnout. Another objective was to determine whether school climate interacts with personality factors to influence stress and burnout.

A key reason for studying stress and burnout is that teachers increasingly suffer from them. According to their own admission, many teachers leave or wish to leave the profession because they feel stressed and burned out by teaching. On both sides of the Atlantic, surveys and anecdotes attest to this growing dissatisfaction (Cichon and Koff, Note 1; Kyriacou and Sutcliffe, 1978, 1979). One researcher (Dunham, 1976) in fact concluded that: (1) more teachers are experiencing more severe stress than ever before, and (2) job-related stress is found at all levels of teaching.

Up to now, research on teacher stress has primarily emphasized its situational determinants, such on-the-job stressors as student misbehavior, administrative obstinacy, and peer isolation. The majority of studies have concentrated on these and other environmental stressors, referring to them by such terms as "teaching situations" (Dunham, 1976), "teaching events" (Cichon and Koff, Note 1), and "sources of job dissatisfaction" (McLaughlin and Shea, 1960). Because of the apparent importance of environmental stressors to teacher stress responses, a measure of school climate was included in the present study.

The variable, school climate, was suggested by the above studies on the teaching environment as a potential stressor. The term "climate" refers to

the quality of human relations within the school and the degree to which teachers perceive that the school meets their needs for personal growth, affiliation, and influence. Because the bulk of previous stress research among other populations (Appley and Trumbull, 1967; Lazarus, 1974; McGrath, 1970) has shown that people's perceptions are responsible for transforming potential situational stressors into actual ones, teachers' perceptions of the quality of their work setting were judged to be an important determinant of their occupational stress level.

Although most of the popular literature on teacher stress focuses on external sources of stress and burnout, researchers suggest that a look at the internal determinants of stress is also warranted. Cichon and Koff (Note 1), for example, recommended that future studies investigate "personality types," "psychological defenses," and " a sense of mastery over one's fate" -- variables that have already been linked to patients' stress and recovery rates(Andreasen, Noyes, and Hartford, 1972; Rabkin and Struening, 1976) on the one hand, and to disease proneness on the other (McQuerter, 1978).

Support for the influence of personality on stress stems from clinical as well as empirical evidence. The first personality variable considered in the present study is intolerance of ambiguity. It was suggested by the observations of two psychiatrists who treated stressed and anxious teachers. Bloch (1978) described most of his patients as passive, rigid, and moderately obsessive, while Solomon (1960) noted that overly anxious teachers responded to perceived threats by narrowing their perceptual fields. The more they did so, he argued, the more they inhibited their creative flow of ideas and the more they were forced to rely on "less and less adequate" coping behaviors (p. 85). As teachers' anxiety deepened, Solomon found that their

linking patterns solidified, as if preventing them from experiencing the threat of new, unregulated situations. Studies cited in a recent review of research on teacher anxiety (Keavney and Sinclair, 1978) support these observations. Several studies found, for example, that highly anxious teachers reduce indecision and uncertainty by becoming increasingly prescriptive and intolerant of change.

At least two researchers have demonstrated a relationship between intolerance of ambiguity and anxiety or stress. Both Luchins' (1959) early work with diverse populations and Parkay's (1980) recent investigation of urban teachers suggested curvilinear relationships between rigidity or dogmatism and stress. In both sets of studies, low rigidity/dogmatism was associated with moderate stress, moderate rigidity/dogmatism was associated with low stress, and high rigidity/dogmatism was associated with high stress. Assuming that intolerance of ambiguity is related to rigidity/dogmatism, it seemed reasonable to hypothesize in the present study that there would be a curvilinear relationship between intolerance of ambiguity and teacher stress.

The second personality variable considered in the present study is attitude toward students. It was chosen in response to teachers' identification of stressful school events. Secondary school teachers, in particular, ranked students' negative attitudes toward learning and their hostile, disruptive classroom behavior as primary stressors (Bardo, 1979; Kyriacou and Sutcliffe, 1979; Lortie, 1975). Research on teacher anxiety -- a construct closely related to teacher stress -- is consistent with these findings. After reviewing the research on teacher anxiety, Keavney and Sinclair (1978) concluded that its principal source was poor teacher-pupil relationships.

Among the personality variables considered in this study, locus of control has the most empirical support as a correlate of the stress response. The term, which was invented and first measured by J.B. Rotter (1962), means the degree to which people perceive that they control their environments. "Internals" (who are at one end of Rotter's perceived control continuum) see themselves as directing their own lives, while "externals" (at the other end of the continuum) see themselves as the pawns of others. Lazarus (1967) theorized that locus of control may partly explain people's adaptive or maladaptive responses to the same threatening situation. Averill (1973) also declared that perceived lack of control is necessary for stress to occur. Support for this theory is found in Lefcourt's (1976) review of research on the relationship between locus of control and response to aversive events. He concluded, based on a review of research evidence, that people with an internal locus of control seemed better able to cope with such events than people with an external locus. For this reason, locus of control was selected as the third personality variable to be investigated in the present study.

In the present study, locus of control, attitude toward students, intolerance of ambiguity, and school climate were directly correlated with stress and burnout. However, the possibility of an interaction between personal and situational variables was also explored because research indicates that both variables acting in concert often account for more response variance than either variable alone (Bowers, 1972; Endler, 1973). In this study it was hypothesized that correlations between personality factors and job stress would be low when school climate is positive, because there would be relatively few job stressors to activate personologically based appraisals of threat. Conversely, it was hypothesized that the correlations would be

high when school climate is negative because there would be many job stressors to activate threat appraisals.

Negative climates, it would seem, are more difficult for people with high external locuses of control to cope with. Since the source of success and support from an external's standpoint lies outside the self, in the environment, an uncertain, unsupportive, or hostile environment is especially threatening. A similar relationship would appear to hold for the variables, attitude toward students and intolerance of ambiguity. In schools with negative climates, the burden of a negative attitude toward students may be much heavier than in schools with positive climates. Likewise, individuals with a low tolerance for ambiguity might feel particularly frustrated and stressed when the work setting is uncertain or conflict-ridden.

METHOD

Selection and Development of Measures

A complete questionnaire that includes all of the following instruments in the form that they were administered to the teachers is presented in Appendix A (pages A-1 through A-5).

Stress. Perceived stress was measured by two instruments. The first instrument consists of a single questionnaire item: "In general, how stressful do you find being a teacher?" answered on a five-point scale from "not at all" to "extremely" stressful (see page, A-1, item1). The second instrument is a multi-dimensional measure that assesses teachers' stress proneness in three generic situations: interpersonal (see page A-1, items 4-18), new/ambiguous (see page A-2, items 19-33), and routine (see pages A-2, A-3, items 34-48). The level of respondents' stress in these situations is determined by the strength of their agreement on a five-point scale (from "strongly agree" to "strongly disagree") with seven positive items (e.g., feel relaxed) and

the strength of their disagreement with eight negative items (e.g., perspire, feel upset).

The first of these measures is an overall measure of self-reported stress used by Kyriacou and Sutcliffe (1978, 1979) to assess the stress levels of British teachers. No specific reliability tests have been conducted on this instrument. The authors, however, claim a high degree of validity for their measure since it intercorrelated significantly and positively with teacher ratings of 51 sources of stress such as pupil non-acceptance of teacher authority ($r = .52$). It also correlated highly with 17 stress symptoms such as exhaustion ($r = .61$) and frustration ($r = .52$). It thus appears possible to assess a teacher's stress level on the basis of a single direct question.

The second measure was adapted from the Self-Report Inventory of General Trait Anxiousness (Endler & Okada, 1974). This inventory was designed to measure multi-dimensional facets of trait anxiety by seeking the relative contributions of people, situations, and modes of response to self-reported levels of anxiousness. The form of the measure used in this study contains Endler and Okada's interpersonal new/ambiguous, and routine situation stems (e.g., you are in situations involving interactions with other people) and 15 response modes (e.g., feel comfortable, feel tense). Because occupational danger is not a common predicament for the sample of suburban teachers used in this study, that subscale was eliminated.

Coefficient alpha reliabilites for this inventory ranged from .62 to .86 in previous studies and were .90 (interpersonal stress), .92 (new situation stress), and .87 (routine situation stress) in the present study. The intercorrelations of the four situational measures of the original inventory were low to moderate, ranging from .08 to .48. These figures indicate that, "for normal subjects, at least, the general situations measuring different

aspects of A-Trait, are relatively independent of one another" (Endler and Okada, 1974, p. 32). Because this inventory contains generic situational categories applicable to professional life, physiological and psychological modes of response, and a range of response intensity for each mode, it seems well-suited to measuring different types of teacher stress.

Burnout. Perceived burnout was measured by the following questionnaire items: (1) "In general, how burned out do you feel by teaching?" and (2) "How often have you contemplated leaving teaching because of burnout?" Both questions are answered on a five-point scale from "not at all" to "extremely." (See page A-1, items 2 and 3.)

The condition of burnout (physical and emotional exhaustion) is considered to be an end-product of extreme negative stress. Extremely distressed teachers are also likely to exhibit the symptom of exhaustion, and may crystallize this through a wish (whether acted upon or not) to leave their jobs. The two burnout items are thus used primarily as an elaboration of teachers' response to the first stress item.

The various measures of stress and burnout were intercorrelated in the present study in order to assess their construct validity. Since, in theory, each measure taps a different aspect of stress, the correlations among the measures were not expected to be high. On the other hand, since each measure is presumbably related to the general construct of stress, the correlations among the measures were not expected to be very low. The measures were expected to be moderately intercorrelated.

Locus of control. Internal-external locus of control was measured in this study by Rotter's scale (1966) which consists of 29 pairs of statements. "Many of the unhappy things in people's lives are partly due to bad luck," for example, is paired with "people's misfortunes result from the mistakes

they make." Respondents are asked to choose the statement in each pair that most closely resembles their perceptions about their control over events. Since the scale is scored in terms of the external dimension, high scores indicate an external locus, and low scores an internal locus, of control. (See page A-3.)

Rotter's measure was chosen for this study because it is the most widely used locus of control measure in psychological research in general (MacDonald, 1973) and in stress research in particular (Lefcourt, Note 2).

The reliability and validity of Rotter's scale has been well established. In 1966, a Kuder-Richardson coefficient of .70 was reported by the author. Also at that time, a month-long test-retest reliability of .72 was reported. Finally, the vast majority of investigations of locus of control have employed the Rotter scale and there are ample empirical findings showing that individual differences in perceptions about control do exist, and that Rotter's instrument is sensitive to these differences.

Attitude toward students. Teacher predispositions toward establishing rapport with their students were measured using the 60-item version of the Minnesota Teacher Attitude Inventory (MTAI) developed by Yee and Fruchter (1971). The original MTAI was a 150-item scale developed by Cook, Leeds, and Callis (1951). Each item of the 60-item scale is an opinion statement, such as "pupils have it too easy in the modern school," with which respondents agree or disagree on a five-point scale (from "strongly agree" to "strongly disagree). The measure yields a single score, with a high score indicating a humanistic, child-centered orientation. (See pages A-3 and A-4.)

A split-half reliability coefficient of .93 was reported for the MTAI (Cronbach, 1953). Test-retest reliability during early professional courses

and during the months of teaching is approximately .70 (Cronbach, 1953).

The developers established the MTAI's construct validity by constructing a large initial set of items and then selecting those that were responded to differently by successful and unsuccessful teachers. These two criterion groups were selected on the basis of principals' appraisals of teacher competence. Teachers' scores on the revised inventory of items were then validated concurrently by correlating them with principals', pupils', and trained observers' ratings. Correlations between MTAI scores and the above ratings ranged from .46 to .63.

When Yee and Fruchter (1971) factor analyzed the original MTAI, their analysis produced five factors which were defined by a total of 60 of the original items. The five factors together accounted for 25% of the variance of the 150-item scale.

Although it was not their primary intent, Yee and Fruchter had in fact produced a shortened form of the MTAI. In 1977, Bell found that the same constructs were common to both sets of items, for high correlation coefficients (.96, .97) were produced on two comparisons between total scores on the two versions of the inventory. In addition, Bell's factor analysis of the 60-item version produced the same five factors that Yee and Fruchter had discovered in the original instrument. Because of these findings and because the 60-item version is easier to administer and score, it was used instead of the original scale in the present study.

Intolerance of ambiguity. Teachers' tendencies to perceive ambiguous situations as sources of threat or of challenge were measured using a 16-item scale developed by Budner (1962). Subjects respond on a seven-point Likert-type scale to statements like "what we are used to is always preferable to what is unfamiliar." The scale presents three types of ambiguous situations:

new situations in which there are no familiar cues; complex situations in which there are numerous cues; and seemingly insoluble situations in which there are contradictory cues. "What we are used to is always preferable to what is unfamiliar" is an example of a new situation. The statement "a good job is one where what is to be done and how it is to be done are always clear" illustrates a complex situation. Finally, the sentence "there really is no such thing as a problem that can't be solved" depicts an insoluble situation. A high score indicates a low tolerance of ambiguity, which Budner interpreted as a tendency to perceive ambiguous situations as threatening. (See page A-4.)

Budner's item selection and sampling procedures were carefully explained. An initial pool of 33 items reflecting his three types of ambiguous situations was administered to 17 different undergraduate and graduate classes in education, business administration, nursing, engineering, and sociology. Only items yielding a correlation of .35 or higher between the responses to each item and the total scale score were included in the final scale. Although Budner's Cronbach-alphas only range between .40 and .62, ~~Shaver (1973) pointed out that~~ these low internal consistency coefficients reflect the multidimensionality of the three-situation scale and are therefore acceptable. Test-retest reliability is more appropriate for a multidimensional scale, and this was .85 after a four-week interval.

Budner provided detailed information about his scale's validity. The intercorrelations among his scale and three other tolerance of ambiguity scales (the Princeton scale, the Coulter scale, and the Walk scale) ranged from .17 to .54. Budner concluded that, in general, the measures intercorrelated highly enough to suggest that they were "tapping a common dimension, presumably intolerance of ambiguity" (1962, p. 35).

In summary, Budner's intolerance of ambiguity scale was chosen over other similar instruments because: (1) his definition of this construct was more suitable to a cognitive-personality/ stress study; and (2) the scale has adequate validity and reliability.

Measures of intolerance of ambiguity, attitude toward students, and locus ofcontrol were intercorrelated in the present study in order to assess the construct validity of these measures. In theory, these measures tap different aspects of personality and therefore were not expected to intercorrelate highly.

The quality of the school as a work setting (school climate). To assess the quality of the school as a work setting, 14 items were selected from an 84-item inventory of the school environment developed by Richard Arends (Arends, Note 3). The 14 items assess the quality of the work setting along five dimensions: (1) the clarity and openness of communication and decision-making; (2) the cooperativeness and cohesiveness of the staff; (3) the availability of incentives and rewards for achievement; (4) the degree of resource support provided to teachers; and (5) the staff's sense of pride in the school. A high score indicates that the school work setting has a positive quality. (See pages A-4 and A-5.)

Arends' measure was considered the most appropriate inventory available, even though it had not been field-tested. Other inventories of school environments were reviewed (House, Steele, and Kerins, 1971; Moos, 1979; Walberg and Anderson, 1968), but these focused on the individual classroom environment, rather than on the environment of the school as a whole. Pace and Stern's instrument (1957) does focus on the total environment, but it was developed for use in college and university settings and its applicability to a junior high school setting is questionable.

As a test of the face validity of Arends' scale, two junior high tea-

chers, one curriculum coordinator, and two junior high principals were asked to independently review the items to see whether they represent the most important determinants of the quality of the school as a work setting. More specifically, the raters were asked: "If you knew the answers to these 14 questions, would you know whether the school was a healthy or unhealthy place in which to work as a teacher?" Each of the five reviewers agreed that the 14-item scale provided a good overall indication of the "healthiness" or "unhealthiness" of the school environment.

To determine whether the scale discriminated quality of school climate among the sample of junior high/middle schools used in the present study, the scale was administered over the telephone to four or five teachers in each school (henceforth called the independent sample). As a check on the validity of the scale, the rank orders of school quality obtained from a panel of three district officials familiar with all the schools were also obtained.

In general, the school quality scale administered to the independent sample of teachers discriminated among the schools in a direction that was consistent with the ratings of the school district officials. Schools ranked highest in quality by the panel also received high scores from the independent sample. Schools ranked low in quality by the panel received moderate or low scores on the scale. However, schools judged of moderate quality by the panel also received moderate or low scores on the scale, suggesting that the scale was not particularly sensitive to differences among moderate to low quality schools. It is also possible that schools in the sample that were not clearly of high quality did not differ from each other significantly.

Since the scale appeared to discriminate well between two levels of school climate rather than three, the sample of schools was divided into high and low climate schools for the purpose of the interaction analyses.

The four schools with the highest mean school climate scores (obtained from the independent teacher sample) became the high climate schools and the four schools with the lowest mean scores became the low climate schools.

In general, the scores from the larger questionnaire sample of teachers (N = 162) reflected the school means of the independent sample of teachers and the rank orders of the three district officials. The internal consistency coefficient of the measure was .81 showing that the items on the scale are related to each other and apparently are measuring the same construct.

Sample

The sample consisted of 202 teachers from nine junior high/middle schools in three suburban districts in western Oregon. The junior high/middle school level, encompassing grades six through nine, was chosen because teaching at this level is commonly considered to be more stressful than teaching at the elementary or senior high school levels (Wiles and Bondi, 1981).

The nine schools were chosen from among the 14 junior high/middle schools in the three districts. They were chosen on the basis of the independent rankings of the panel of district officials referred to earlier. Three schools were chosen that were rated by all three raters as having the most optimal quality. Three schools were chosen that received intermediate rankings by all three raters. Three were chosen that consistently elicited low rankings.

Of the 272 teachers in the nine schools, 202 or 75 percent were randomly selected and asked to participate in the study. A total of 162 teachers, 80 percent of those contacted, responded to the questionnaire which consisted of the stress/burnout measures, the personality measures, and the school climate measure.

Data Collection

Subjects were asked to participate in the study on an individual basis.

Each subject was first contacted by telephone. Before being asked to participate, teachers received a brief explanation of the purpose of the study, although no specific hypotheses were disclosed. They were asked to fill out the complete 40-minute stress-personality-school climate survey. If they agreed, they were mailed questionnaires and stamped, self-addressed envelopes with a request to return them within four weeks. All prospective questionnaire respondents were informed that, after the data were analyzed, their personal scores and any implications for professional development would be discussed upon request. They were also told that they could receive a summary of the study's findings. If surveys were not returned promptly, a coding process revealed the late respondents. These people were then telephoned to remind them of their agreement. Only about 20 percent of the late returnees failed to respond to this second contact.

RESULTS

Three categories of results are presented in this section: (1) intercorrelations among the various measures; (2) descriptive statistics on levels of stress and burnout; and (3) relationships among stress/burnout, personality, and school climate.

Intercorrelations Among the Various Measures

Intercorrelations among the measures of stress and burnout are presented in Table 1. Although all the intercorrelations are statistically significant, the correlations are higher between the overall measures of stress and burnout than between these measures and the stress subscales. This suggests that the subscales have construct validity. That is, they tap more specific aspects of stress than the aspect assessed on the overall measures.

Correlations among the personality measures are presented in Table 2. The relationship between locus of control and attitude toward students was

statistically significant. Teachers with an external locus of control had a less positive attitude toward students than teachers with a more internal locus. The relationship between attitude toward students and intolerance of ambiguity was also statistically significant, and stronger than the relationship between locus of control and attitude toward students. Teachers who were intolerant of ambiguity had significantly less positive attitudes toward students, indicating that the measures of those two constructs may tap the same basic element of personality.

Levels of Stress and Burnout

The descriptive statistics presented in Table 3 indicate that teachers in the sample were, on the average, moderately to very stressed and moderately burned out. Generally teachers' feelings of overall stress were more intense (3.42) than were their feelings of burnout (3.05) and their desire to leave the profession (2.71).

On each of the three situational stress subscales, the mean score was lower than the mean on the overall stress and burnout scales. It seems that, as a global response, teacher stress may encompass more than stress encountered in the interpersonal, new, or routine situations measured by these scales. Of the three potentially stressful situations, teachers found routine tasks such as record-keeping, grading, or preparing lessons to be less stressful than either interacting with people or confronting new issues and situations.

Relationships Among Stress/Burnout, Personality, and School Climate

Correlations between locus of control and each measure of stress and burnout are reported in Table 4. All of the correlation coefficients, although small in magnitude, were in the predicted direction. Teachers with an external locus of control tend to report more stress and burnout than

TABLE 1

CORRELATIONS AMONG STRESS AND BURNOUT MEASURES FOR TOTAL SAMPLE[a]

	Variable	1	2	3	4	5	6
1.	Overall stress	---	.61[b]	.50	.40	.27	.22
2.	Overall burnout	161	---	.71	.26	.18	.18
3.	Wish to leave teaching because of burnout	161	161	---	.25	.17	.21
4.	Interpersonal stress	158	158	158	---	.62	.21
5.	New situation stress	158	158	158	157	---	.19
6.	Routine situation stress	157	157	157	157	157	---

[a]Pearson product-moment correlations are presented above the main diagonal, while sample size is presented below the main diagonal.

[b]All correlations are statistically significant at the .05 level.

TABLE 2

CORRELATIONS AMONG PERSONALITY MEASURES FOR TOTAL SAMPLE[a]

	Variable	1	2	3
1.	Locus of control	---	-.18*	.06
2.	Attitude toward students	157	---	-.51**
3.	Intolerance of ambguity	162	157	---

*Statistically significant at .05 level.

**Statistically significant at .001 level.

[a]Pearson product-moment correlations are presented above the main diagonal, while sample size is presented below the main diagonal.

TABLE 3

DESCRIPTIVE STATISTICS ON MEASURES OF STRESS AND BURNOUT FOR TOTAL SAMPLE

Variable	N	M[a]	SD
1. Overall stress	161	3.42	.72
2. Overall burnout	161	3.05	.97
3. Wish to leave teaching because of burnout	161	2.71	1.19
4. Interpersonal stress	159	2.28	.55
5. New situation stress	159	2.47	.54
6. Routine situation stress	158	2.06	.46

[a]The means on each measure were calculated in reference to a 5-point response scale in which 1 = very low levels of the variable and 5 = very high levels of the variable. In order to obtain the mean total score, multiply the mean item score by the number of items in the measure.

TABLE 4

RELATIONSHIP BETWEEN LOCUS OF CONTROL AND MEASURES OF STRESS AND BURNOUT

Variable	N	r	p
1. Overall stress	161	.14	.08
2. Overall burnout	161	.17	.03
3. Wish to leave teaching because of burnout	161	.08	.30
4. Interpersonal stress	159	.24	.005
5. New situation stress	159	.19	.02
6. Routine situation stress	158	.12	.13

teachers with an internal locus of control. This is particularly true with respect to interpersonal stress.

Correlations between attitude toward students and each measure of stress and burnout are reported in Table 5. All of the correlation coefficients were in the predicted direction. Teachers with a negative attitude toward students tend to report more stress and burnout than teachers with a positive attitude. Although most of the correlations were small in magnitude, the one between attitude toward students and interpersonal stress was moderate ($r = -.40$). Teachers with a negative attitude seem to experience more interpersonal stress than other kinds of stress.

Product-moment correlations between intolerance of ambiguity and each measure of stress and burnout are shown in Table 6. Inspection of the scatterplot for each correlation did not reveal any evidence of curvilinearity. Therefore, correlation ratio etas were not computed. Of the linear relationships, three were statistically significant: those between intolerance of ambiguity and overall stress, interpersonal stress, and new situation stress. Teachers who are intolerant of ambiguity tend to report more stress and burnout than teachers who are tolerant of ambiguity.

Table 7 reports the correlations between school climate and measures of stress and burnout. These relationships generally are weak, although a relationship that approached statistical significance was found between school climate and routine situation stress. Teachers in schools with positive work settings experienced more stress in routine situations such as record-keeping than did teachers in schools with more negative work settings.

As shown in Table 8, the relationship between locus of control and each measure of stress and burnout except overall burnout was stronger in schools with a negative climate than in schools with a positive climate.

TABLE 5

RELATIONSHIP BETWEEN ATTITUDE TOWARD STUDENTS AND MEASURES OF STRESS AND BURNOUT

	Variable	N	r	p
1.	Overall stress	156	-.25	.002
2.	Overall burnout	156	-.22	.007
3.	Wish to leave teaching because of burnout	156	-.19	.02
4.	Interpersonal stress	155	-.40	.001
5.	New situation stress	154	-.27	.001
6.	Routine situation stress	154	-.08	.31

TABLE 6

RELATIONSHIP BETWEEN INTOLERANCE OF AMBIGUITY AND MEASURES OF STRESS AND BURNOUT

	Variable	N	r	p
1.	Overall stress	161	.21	.008
2.	Overall burnout	161	.10	.22
3.	Wish to leave teaching because of burnout	161	.09	.25
4.	Interpersonal stress	159	.3	.001
5.	New situation stress	159	.27	.001
6.	Routine situation stress	158	.03	.68

TABLE 7

RELATIONSHIP BETWEEN SCHOOL CLIMATE AND MEASURES OF STRESS AND BURNOUT

	High Climate Schools (N=4)			Low Climate Schools (N=4)				
	N	$\bar{X}$	S.D.	N	$\bar{X}$	S.D.	t	p
Overall stress	78	3.40	.73	61	3.43	.78	-.22	.82
Overall burnout	78	3.15	.78	61	2.90	.91	1.57	.12
Wish to leave teaching because of burnout	78	2.53	1.12	61	2.87	1.19	1.75	.08
Interpersonal stress	76	33.17	7.89	61	35.60	8.65	-1.71	.09
New situation stress	75	37.57	7.73	62	37.32	8.19	.18	.86
Routine situation stress	74	31.96	7.17	62	29.71	6.20	1.94	.06

TABLE 8

RELATIONSHIP BETWEEN LOCUS OF CONTROL AND MEASURES OF STRESS AND BURNOUT IN SCHOOLS WITH POSITIVE VERSUS NEGATIVE CLIMATES

	Positive Climate Schools (N=4)			Negative Climate Schools (N=4)			Significance of Difference Between Correlations	
Variable	N	r	p	N	r	p	z	p
1. Overall stress	77	.05	.67	69	.16	.19	.66	.25
2. Overall burnout	77	.15	.19	69	.09	.45	.36	.36
3. Wish to leave teaching because of burnout	77	.05	.64	69	.13	.29	.48	.32
4. Interpersonal stress	75	.10	.41	69	.34	.004	1.49	.07
5. New situation stress	76	.11	.36	68	.27	.03	.98	.16
6. Routine situation stress	74	-.02	.86	69	.18	.13	1.18	.12

Thus the hypothesis was somewhat supported. The relationship between locus of control and interpersonal stress was particularly strong in negative schools in comparison to the relationship in positive schools. However, in no case was the magnitude of the difference between correlations statistically significant.

As shown in Table 9, the relationship between attitude toward students and each measure of stress and burnout except overall stress was stronger in schools with a negative climate than in schools with a positive climate. The relationship between attitude toward students and new situation stress was particularly strong in negative climate schools ($r = -.42$). By comparison, the relationship between these two variables in positive climate schools was slight ($r = -.11$). The difference in magnitude of these two correlation coefficients was statistically significant (p .02).

As shown in Table 10, the relationship between intolerance of ambiguity and each measure of stress and burnout was stronger in schools with a negative climate than in schools with a positive climate. The difference in strength of relationships was particularly apparent for the measures of specific stress (interpersonal, new situation, and routine). However, only in the case of routine situation stress was the magnitude of the difference between correlation coefficients for the positive climate schools ($r = -.23$) and the negative climate schools ($r = .29$) statistically significant.

Regression analyses, which were also computed for the interactions among stress, personality, and school climate, produced three significant interactions: between locus of control and interpersonal stress; locus of control and new situation stress; and intolerance of ambiguity and new situation stress. These suggest that teachers with an external locus of control experience more stress in new and interpersonal situations in schools with

TABLE 9

RELATIONSHIP BETWEEN ATTITUDE TOWARD STUDENTS AND MEASURES OF STRESS AND BURNOUT IN SCHOOLS WITH POSITIVE VERSUS NEGATIVE CLIMATES

Variable	Positive Climate Schools (N=4)			Negative Climate Schools (N=4)			Significance of Difference Between Correlations	
	N	r	p	N	r	p	z	p
1. Overall stress	75	-.25	.03	67	-.27	.07	.18	.43
2. Overall burnout	75	-.16	.16	67	-.23	.06	.42	.34
3. Wish to leave teaching because of burnout	75	-.15	.19	67	-.22	.07	.42	.34
4. Interpersonal stress	74	-.35	.002	67	-.46	.001	.87	.19
5. New situation stress	74	-.11	.37	67	-.42	.001	1.97	.02
6. Routine situation stress	74	.03	.78	67	-.19	.12	1.29	.10

TABLE 10

RELATIONSHIP BETWEEN INTOLERANCE OF AMBIGUITY AND MEASURES OF STRESS AND BURNOUT IN SCHOOLS WITH POSITIVE VERSUS NEGATIVE CLIMATES

	Positive Climate Schools (N=4)			Negative Climate Schools (N=4)			Significance of Difference Between Correlations	
Variable	N	r	p	N	r	p	z	p
1. Overall stress	77	.18	.11	69	.21	.09	.18	.43
2. Overall burnout	77	.02	.87	69	.05	.69	.18	.43
3. Wish to leave teaching because of burnout	77	.02	.84	69	.10	.42	.47	.31
4. Interpersonal stress	75	.25	.03	69	.36	.003	.72	.24
5. New situation stress	76	.20	.07	68	.33	.005	.82	.21
6. Routine situation stress	74	-.23	.05	69	.29	.02	3.12	.001

negative climates, whereas teachers with an internal locus of control experienced similar stress levels in both climates. Likewise, more intolerant teachers experienced greater amounts of stress in new situations in schools with negative climates, whereas more tolerant teachers experienced similar stress levels in both climates.

DISCUSSION

Results in Relation to Theory and Prior Research

The results of the present study confirm the trend identified in several previous studies and in numerous journalistic reports: teachers experience high levels of stress and burnout. Almost 50 percent of the present sample reported feeling very or extremely stressed by teaching; 36 percent admitted to feeling burned out; and 21 percent said they often thought of leaving teaching because of those feelings. It appears that teachers are more stressed than other professional groups, such as athletes, bank managers, nursing students, and college undergraduates (Endler, Note 4).

As predicted, the study found a relationship between stress and each of the three cognitive-personality variables. The relationships, though of modest magnitude, were in the predicted direction. With respect to locus of control, teachers who were external reported higher levels of interpersonal and new situation stress than teachers who were internal. This result confirms Crandall and Lehman's (1977) and Organ's (1976) findings that "externals" among the general population generally perceive life to be more stressful than do "internals."

A negative correlation was found between all of the measures of teacher stress and attitude toward students as measured by the MTAI. It appears that if a teacher tends to dislike and distrust students, he or she will be stressed generally, interpersonally, and in new teaching situations. This finding is

consistent with the findings of other researchers (Cichon and Koff, Note 1; Kyriacou and Sutcliffe, 1978) that negative attitudes toward students and toward disruptive behaviors can produce high levels of stress. These findings give point to the observation (Lortie, 1975) that a teacher's greatest rewards and most acute disappointments derive from interactions with students. Indeed, poor teacher-pupil relationships might be the principal cause of teachers' occupational anxiety (Keavney and Sinclair, 1978).

A significant relationship was found between intolerance of ambiguity and overall stress, interpersonal stress, and new situation stress. This relationship was linear, however, rather than curvilinear as originally predicted. The more intolerant the teacher is of ambiguity, the more likely he or she is to be stressed.

It is not difficult to see why intolerance of ambiguity would leave teachers vulnerable to stress. As the findings from the present study suggest, many teachers are stressed interpersonally because dealing with other people -- be they students, administrators, colleagues, or parents -- is always unpredictable and often unsettling. As Jackson (1968) observed, in a typical day a teacher engages in more than one thousand interpersonal interactions, many of which are complex and have uncertain outcomes. Teachers need to be able to tolerate this kind of complexity and uncertainty if they are to juggle successfully the numerous demands that shape a school day.

Each of the three personality measures related closely to teacher stress. The situational variable, school climate, did not correlate with teachers' stress levels except in the case of routine situation stress. The results indicate that the more positive the school climate, the higher the level of routine stress. This relationship is perplexing and difficult to inter-

pret. A possible explanation is that stress associated with routine is more difficult to bear in positive schools than in negative schools simply because more pressing sources of stress are not present.

Perhaps one reason why school climate did not explain a significant portion of the variance in teacher stress is the restricted range of school climate scores. Out of a possible range of 14 to 70, the schools received ratings between 44 and 56. No school was torn by violence, massive staff turnover, or even a change in administration. It may be that climate, or a similar environmental variable, only affects teacher stress when it assumes a more extreme form or level. Another reason for the weak relationship between school climate and stress might be that the school climate measure lacks validity.

Several interactions were found among school climate, cognitive-personality factors, and teacher stress. The relationship between locus of control and stress was greater in negative schools than in positive schools. This might mean that teacher personality is not important in positive schools because there is little to activate stress. Personality becomes important in negative schools, however, because such schools presumably are stressful and, therefore, personality mechanisms become activated.

Johnson and Sarason (1978) produced similar findings for locus of control, life stress, and anxiety. Their findings indicated that people with an external locus of control are significantly more anxious over negative life changes than are people with an internal locus of control. At the same time, "externals" do not feel appreciably more anxious about positive life changes than do "internals." In both studies, then, environmental stressors acted as a moderating variable controlling the relationship between locus of control and anxiety or stress.

The environmental stressor of school climate also affected the relationship between intolerance of ambiguity and stress. This relationship was stronger in schools with a negative climate than in schools with a positive climate. Although no prior research has been done on the relationship among intolerance of ambiguity, school climate, and new situation stress, one can imagine how new situations might be handled in schools with negative climates as compared to schools with positive climates. In schools with negative climates, information that teachers judge to be important is unavailable, communications are often unclear, and support for new ideas tends to be limited. While teachers who are tolerant of uncertainty might be able to channel their concerns about this situation into problem-solving behaviors, teachers who are intolerant of uncertainty may not be able to do so. Intolerant teachers might try instead to block out thoughts of change or to complain about it rather than to respond constructively to it. These actions could only increase their stress levels. In positive well-run schools, in contrast, information, communication, and support are less ambiguous, allowing both tolerant and intolerant teachers to feel more at ease about actual and proposed changes. In such settings, stress levels would probably not be very high for either tolerant or intolerant teachers.

Finally, no significant interaction was found among attitude toward students, school climate, and stress. A plausible reason for this finding might be that, in this area of Oregon, student bodies as a whole are not sufficiently violent or apathetic to have much influence on the working climate of particular schools. An adequate test of the hypothesis would require schools with a wide range of student quality -- a comparison, for example, between suburban and inner-city schools.

Implications for Teacher Preparation and Staff Development

As a step toward helping teachers to manage stress constructively, professors of teacher education might adopt the goal of helping pre-service students to develop (a) an internal locus of control, (b) positive, realistic attitudes toward students, and (c) tolerance of ambiguity.

With respect to locus of control, Guskey (1981) raised the possibility of designing training programs to directly enhance teachers' beliefs in self-responsibility for student learning. For example, education students enrolled in a school-based practicum might be assigned to tutor one or two youngsters. Practicum students would be taught to specify learning outcomes and measures of them. If the youngster did not achieve the outcome, the practicum student would be required to identify probable causes of the performance deficits and to adjust plans accordingly. Some practicum students may consistently attribute poor learning only to characteristics of the youngsters or the situation without acknowledging their own responsibility. In these cases, the instructor would confront the practicum student with this "externalizing" tendency and help him to pinpoint the causative effects of his own behavior. In this way, practicum students would not only learn effective instructional practices, but they would also learn about their own styles, perceptions, and beliefs, and the extent to which they need to be modified.

In order to foster a positive, yet realistic attitude toward students, training programs are needed that enable beginning teachers to identify specific characteristics of students that they find pleasant and unpleasant. Beginning teachers who consistently see more unpleasant characteristics, either should be counseled to consider another career or should receive more

intensive instruction in ways of interacting productively with students.

Tolerance for ambiguity might be promoted by offering more courses that use a case study approach to instruction. Such courses are commonly found in law schools and in graduate programs in business management. Complex cases from the "real world" of the classroom could be investigated, discussed, and debated. Students would be expected to consider the various dimensions of a case, the range of responses available to address the problem, and the costs and benefits of each response. Students would be rewarded for their ability to see the tentativeness of problem solutions and to take a position in spite of such tentativeness. It may be that too many education courses are technique-centered, rather than problem-centered, and do not prepare students well for the uncertainties of school life.

The principles identified above in connection with initial teacher preparation apply as well to continued professional development. However, they need to be applied in a different form and with greater sensitivity to the organizational context in which teachers work.

In order to foster internality, steps need to be taken to enable teachers to discover the link between their own behavior and classroom processes that are presumed to influence student learning. Stallings (1980) showed that providing veteran teachers with observational data on their students can awaken teachers to the power of their own action or inaction. This information can help them reassess their views about the causes of students' performance deficits.

With respect to tolerance, possibly the most effective strategy that can be pursued pertains to altering the incentive system of the school. Few schools reward teachers for experimenting with new procedures that carry uncertain outcomes. Risks to existing routines are avoided whenever

possible in many districts. Typically, rewards for keeping order are far more compelling than incentives to innovate. As Lortie (1975) pointed out, the culture of the school reflects and reinforces a civil service mentality in which ambiguity is perceived as a threat to be reduced, rather than a possibility to be exploited.

The same might be said about enhancing teachers' attitudes toward students. After years of interacting with students on a daily basis, perhaps it is natural for some teachers to grow tired of them. School organization rarely permits veteran teachers to vary their class loads or to teach students in different settings. It may be difficult to renew one's respect and liking for students in the face of the uninterrupted sameness of most teaching environments.

Suggestions for Further Research

The study of teacher stress and burnout might profit from the design of measures (e.g., locus of control and interpersonal stress) that are more directly related to teachers' experiences. Situation-specific measures may illuminate the types of events that stress teachers and activate cognitive-personality responses associated with stress.

Secondly, an investigation of the generalizability of the findings should be undertaken. Both grade level and type of school should be varied to include elementary and high school teachers, rural and urban schools, and schools that vary substantially in several dimensions of school climate.

Finally, an experiment could be designed to test whether the strategies proposed above for promoting stress-resistant attitudes and behaviors are effective in achieving these objectives.

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APPENDIX A

TEACHER QUESTIONNAIRE

Instructions: For each statement, please indicate the number that most closely corresponds to how you feel in the space provided. Use the following scale:

1	2	3	4	5
Not at all	Mildly	Moderately	Very	Extremely

_____ 1. In general, how stressful do you find being a teacher?

_____ 2. In general, how burned out do you feel by teaching?

_____ 3. How often have you contemplated leaving teaching because of burnout?

When I am in job-related situations involving expected interactions with other people (including students, colleagues, building staff, administrators, and/or parents), I:

_____ 4. Seek experiences like this.

_____ 5. Feel upset.

_____ 6. Perspire.

_____ 7. Feel relaxed.

_____ 8. Have an "uneasy feeling."

_____ 9. Look forward to these situations.

_____10. Get fluttering feelings in my stomach.

_____11. Feel comfortable.

_____12. Feel tense.

_____13. Enjoy these situations.

_____14. Feel my heart beating faster.

_____15. Feel secure.

_____16. Feel anxious.

_____17. Feel self-confident.

_____18. Feel nervous.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

When I am in job-related situations that are new or strange (e.g., new laws, programs, principals, control groups), I:

_____19. Seek experiences like this.

_____20. Feel upset.

_____21. Perspire.

_____22. Feel relaxed.

_____23. Have an "uneasy feeling."

_____24. Look forward to these situations.

_____25. Get fluttering feelings in my stomach.

_____26. Feel comfortable.

_____27. Feel tense.

_____28. Enjoy these situations.

_____29. Feel my heart beating faster.

_____30. Feel secure.

_____31. Feel anxious.

_____32. Feel self-confident.

_____33. Feel nervous.

When I am involved in routine job-related situations (e.g., record-keeping, grading, preparing lessons), I:

_____34. Seek experiences like this.

_____35. Feel upset.

_____36. Perspire.

_____37. Feel relaxed.

_____38. Have an "uneasy feeling."

_____39. Look forward to these situations.

_____40. Get fluttering feelings in my stomach.

1	2	3	4	5
Never	Rarely	Sometimes	Often	Always

____41. Feel comfortable.

____42. Feel tense.

____43. Enjoy these situations.

____44. Feel my heart beating faster.

____45. Feel secure.

____46. Feel anxious.

____47. Feel self-confident.

____48. Feel nervous.

Instructions: In the next section, circle the letter (a or b) of the statement that is closest to your perception.

This part of the questionnaire reproduces the items found in J.B. Rotter, Generalized expectancies for internal versus external control of reinforcement, Psychological Monographs, 1966, 80 (Whole No. 609).

Instructions: Read each of the following statements about teacher-pupil relationships and decide how you feel about each one. Then put a number indicating the extent of your agreement with each statement in the space provided. Think in terms of general situations, rather than specific ones. Please respond to every item. Use the following scale:

1	2	3	4	5
Strongly Agree	Agree	Undecided or Uncertain	Disagree	Strongly Disagree

This part of the questionnaire reproduces 60 items from the original MTAI. The 60 items were those items identified by Yee and

Fruchter (1971) for their short form of the MTAI. The item statements correspond to the 60 item numbers that follow in the long form of the MTAI (Cook, Leeds, & Callis, 1951), e.g., items 1, 13, 15, 16, 19, 20, 21, 23, 24, 27, 34, 35, 36, 47, 52, 53, 54, 63, 64, 65, 71, 72, 75, 76, 77, 80, 81, 85, 86, 88, 90, 92, 93, 99, 101, 103, 107, 109, 110, 113, 114, 115, 116, 118, 119, 121, 124, 126, 128, 129, 131, 132, 133, 134, 136, 137, 141, 144, 146, 149.

Complete citations for both forms of the MTAI are as follows:

Cook, W. W., Leeds, C. H., & Callis, R. The Minnesota Teacher Attitude Inventory: Manual. New York: Psychological Corp., 1951.

Yee, A. H., & Fruchter, B. Factor content of the Minnesota Teacher Attitude Inventory. American Educational Research Journal, 8, 119-133

Instructions: Please put a number indicating the extent to which you agree or disagree with each of the following 16 statements in the spaces provided. Use the following scale:

1	2	3	4	5	6	7
Strongly Agree	Moderately Agree	Slightly Agree	No Response	Slightly Disagree	Moderately Disagree	Strongly Disagree

This part of the questionnaire reproduces the items found in S. Budner, Intolerance of ambiguity as a personality variable, Journal of Personality, 1962, 30, 29-50.

DIRECTIONS: As you read each statement below, think about how the statement describes your school. Then, in the space to the left of each statement, write the number of the word that most accuragely describes your perceptions. Use the following scale:

1	2	3	4	5
Never	Seldom	Sometimes	Often	Repeatedly

_____ 1. ɔ ool people refer to the goals of the school and use them to guide instructional and management decisions.

_____ 2. Teachers openly share materials and ideas with one another.

_____ 3. A lot of students in this school are allowed to "drift" or just "get by."

_____ 4. Teachers say that the school is one of the best schools in these parts to teach in.

_____ 5. How often in this school do you believe the work you accomplish is important and valued?

_____ 6. How often can you go to ~~others~~ in the school for help and support?

_____ 7. How often do you have a say in the decisions within the school that affect you?

_____ 8. People in this school tend to gripe about one another.

_____ 9. Decisions in this school are <u>not</u> clearly communicated to people.

_____10. Certain people have more to say about what goes on than do others.

_____11. Administrative paperwork is kept to a minimum in this school.

_____12. Things are rather informal, and few rules governing teacher behavior exist.

_____13. This school has enough materials and resources for teachers to do their work.

_____14. Teachers are encouraged to identify new needs and to try out new solutions.

<u>DIRECTIONS</u>: Please circle the appropriate answer.

Your Sex: M F Grade Level: Elem. Jr. High Sr. High

Years of Experience: 0-1 2-4 5-8 9+

THANK YOU VERY MUCH FOR TAKING THE TIME TO FILL OUT THIS QUESTIONNAIRE. WHEN THE STUDY IS COMPLETED, RESULTS WILL BE SENT TO YOUR SCHOOL. IF YOU'D LIKE MORE DETAILED INFORMATION ABOUT YOUR OWN SCORES, PLEASE CALL ME AT 485-4901.