Teacher Motivation and Job Satisfaction: A Study Employing the Experience Sampling Method

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Levels of job satisfaction and motivation were measured by survey in a sample of 50 teachers. A sample of 12 teachers was then studied using the Experience Sampling Method (ESM). Teachers were randomly beeped by special pagers 5 times a day for 5 days and completed surveys on mood and activity for each beep, resulting in 190 reports of teachers' daily experiences. Conventional survey data corresponded with ESM data. Job satisfaction and motivation correlated significantly with responsibility levels, gender, subject, age, years of teaching experience, and activity. For this group of teachers who work in a school with a selective student body, overall motivation and job satisfaction levels were high. Based upon the findings, it appears that gratification of higher-order needs is most important for job satisfaction.

Introduction

Teachers are arguably the most important group of professionals for our nation's future. Therefore, it is disturbing to find that many of today's teachers are dissatisfied with their jobs. "The mean CES-D (depression scale) score of a sample of 75 Los Angeles teachers was 15.6, a value about twice the mean score obtained in community surveys" (Beer & Beer, 1992). A CES-D score of 16 or greater is considered significant because it is associated with increased risk of depression (Schonfeld, 1989). It is crucial that we determine what increases teacher motivation.

Many factors have been examined in an attempt to find which ones promote teacher motivation. Pay incentives have been found to be unsuccessful in increasing motivation. In their study of 167 teachers, Sylvia & Hutchinson (1985) concluded: "Teacher motivation is based in the freedom to try new ideas, achievement of appropriate responsibility levels, and intrinsic work elements…. Based upon our findings, schemes such as merit pay were predicted to be counterproductive." They explain that true job satisfaction is derived from the gratification of higher-order needs, "social relations, esteem, and actualization" rather than lower-order needs. Indeed, Rothman (1981) contrasts the security and financial motives for entering teaching during the depression years with present-day idealistic and intellectual convictions, especially because other professions pay equally well or better. The conclusion of Greenwood & Soars (1973) that less lecturing by teachers and more classroom discussions relates positively to teacher morale further supports the importance of higher-order needs.

Studies show that improvement in teacher motivation has benefits for students as well as teachers; however, there is no consensus about the precise benefits. For example, researchers have had varying results when examining whether teacher motivation leads to increased levels of academic achievement. Stevens & White (1987) studied the records of students in 15 school districts, with 191 teachers as subjects. The standardized test scores from the California Achievement Test were used as the best estimate of the learned behavior in each teacher's classroom. There was no direct relationship between teacher morale and student achievement. However, Stevens & White surmised that further research on this topic requires an examination of the achievement levels of students prior to their involvement with the teachers participating in the study. "If pretest-posttest scores could be obtained for the time students spent in a teacher's classroom, the achievement of those students while in that teacher's classroom might be more adequately measured." The results of another study involving teachers in small independent school districts demonstrated that high levels of interaction within the faculty group, as determined by responses to questions on the Halpin & Croft Observation Climate Description Questionnaire, correlated significantly with higher pupil reading scores on the California Achievement Test (Jordan, 1986). It is likely that high levels of teacher social interaction on the job are linked to high motivation levels; thus, the possibility that enhanced levels of teacher motivation will lead to superior student achievement cannot be dismissed.

While the relationship between teacher motivation and student achievement has not yet been established, the correlation between teacher motivation and student self-esteem has been shown by Peck, Fox, and Morston (1977). "Teachers with strong positive attitudes about teaching had students whose self-esteem was high. Students seem to recognize the effectiveness of teachers who are satisfied with their teaching performance." Rothman (1981) suggests that this association exists because teachers serve as more than just educators; they are role models. The benefits of teacher satisfaction for both teachers and pupils points to the importance of studying how teachers feel about work. This study undertakes an examination of how teachers feel while doing their daily tasks. The Experience Sampling Method is used to determine which daily work related activities lead to the highest levels of motivation and job satisfaction.

The Experience Sampling Method (ESM) makes use of an electronic device to page the subject several times a day. When beeped, the subject completes a short survey about what they are doing, who they are with, and how they are feeling. ESM thus provides a more richly detailed picture of the day-to-day lives and emotions of participants than conventional surveys. ESM has been used to study how people feel doing different activities and to determine which daily activities are most psychologically rewarding (Kubey & Csikszentmihalyi, 1981). Csikszentmihalyi (1990) has proposed that individuals reach a state of happiness and satisfaction when they are involved in an activity and are functioning at the peak of their abilities. In this situation the individual experiences "high levels of concentration, immersion, strength, and control." He terms this experience "flow." In the present study, the concept of flow will be used to help determine which activities are the most "psychologically

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rewarding," which are more conducive to teacher motivation, and which contribute to the fulfillment of higher-order needs. Flow may also be applied to measure job satisfaction. And job satisfaction, in turn, is an index of morale and motivation (Schonfeld, 1989).

There have been no studies of teacher motivation which have employed the Experience Sampling Method (or any other research method which attempts to examine everyday life). ESM allows for a more precise determination of which activities motivate teachers and lead to their job satisfaction. Conventional survey data, in conjunction with ESM data, was used to increase the sample size, provide demographic data and examine teacher attitudes. Findings may prove useful in determining what increases motivation and job satisfaction levels.

Methods

Subjects. The study made use of two types of surveys. In the first, conventional surveys consisting of fifty questions were distributed to teachers in order to find out whether certain personal characteristics or activities would affect opinions about teaching. The conventional surveys were distributed and completed during the faculty meetings of the Science, Mathematics, English, Social Studies, Foreign Language, and Technology Departments. Faculty meetings occurred at the end of the school day, during the ninth and tenth periods. However, each survey could only be distributed during one of these meetings. Unfortunately, the proportion of teachers within each department attending the ninth and tenth period meetings varied. The Foreign Language Department permitted the distribution, but not the collection, of surveys during the faculty meeting. This explains the low response rate for foreign language teachers. Aside from foreign language teachers, all teachers who attended the meetings designated for distribution and collection completed their surveys. Though the randomness of the sample was not affected by reluctance to participate, it was constrained by the fact that the sample consisted of teachers at a science magnet school where teachers may not confront many of the problems that teachers at other urban high schools often face.

Of the roughly 120 teachers in the school, 51 completed surveys. The teachers in the sample represent a moderately accurate cross-section of the school. Of the respondents, 56.9% were male; 43.1% were female; 19.6% were physical science teachers; 21.6% were English teachers; 11.8% were social studies teachers, 25.5% were teachers of mathematics; and 11.8% were teachers of technology-related subjects. The remaining 9.7% were music, foreign language, and art teachers. Twenty-one point six percent have taught 1 to 10 years; 17.6% have taught for 11 to 20 years; 45.1% have taught for 21 to 30 years; and 15.7% have taught for over 30 years. Forty point eight percent of the teachers held compensatory time jobs (where class load is reduced in exchange for clerical or administrative work), and 32.0% were faculty advisors to a team or club.

In the second part of the study, Experience Sampling Method surveys were given to twelve teachers who volunteered to participate. Each participant was given a watch that was randomly programmed to page the wearer five times throughout the school day. Teachers were given five booklets. Each booklet corresponded to one of the five days in the school week, and each contained six short surveys. Surveys were completed as soon as possible after each beep. The ESM surveys provide multiple snapshots of the lives of teachers by discovering what they felt and thought at the instant they were beeped.

Of the ESM respondents, 25% were science teachers, 25% were mathematics teachers, 25% were English teachers, and 25% were social studies teachers. Fifty-eight point three percent were female and 41.6% were male.

Measures. The conventional survey consisted of forty-five questions. The survey was divided into three sections. The first section included six demographic questions that established subject taught, gender, age, advisorship for a club, length of service, and compensatory time jobs. The second section included thirty-four statements which determined levels of job satisfaction, satisfaction with income, attitude toward paperwork, pride in job, and views on various teaching-related subjects. Likert scales were used as responses with one indicating strong agreement, two indicating agreement, three neutrality, four disagreement, and five strong disagreement.

The last section of the survey was designed to determine how the respondents felt during various activities. These five questions asked the respondent to select from a group of fourteen words, the three words that best described their mood in the following situations: socializing with faculty members, classroom discussions which seem successful, faculty meetings, classroom discussions which seem unsuccessful, and paperwork. The section was adapted from the moods section in the ESM booklet and was first designed for a study of hobby participants (Nash, 1993). The list of moods contains the same words found in the ESM moods section along with other words.

The ESM booklet was adapted from the University of Chicago Sloan Study of Adolescents ESM booklet. The booklet in its original form was piloted by one teacher familiar with the ESM technique. The pilot demonstrated that certain questions were not applicable to teachers. The University of Chicago booklet was then modified to suit teachers and to make them more user friendly. The modified ESM booklets were used by the twelve teachers. The ESM surveys first determined the situation of the respondent by asking the date, time, and location. They were asked whom they were with, what they were thinking, the main thing they were doing, what else they were doing, and how they were feeling at the time of the beep. The sixteen questions that followed were designed to determine such things as the mood of the respondent, their interest in the activity, their enjoyment of the activity, their assessment of its importance, their assessment of their own skill and success in the activity, and their assessment of how much they wanted to be doing the activity. The last question of each ESM survey asked whether something had occurred which could have affected the way the respondent felt, and, if so, to explain.

All responses were one-to-five Likert scales. In the questions "How well were you concentrating?" "Did you feel good about yourself?" "Did you enjoy what you were doing?" "Did you feel in control of the situation?" "Was this activity important to you?" "Were you succeeding?" "Was this activity interesting to you?" and "Do you wish you had been doing something else?", one indicated a response of not at all and five indicated a response of very much. The next questions asked the respondents to rate "the challenges of the main activity" and their "skills in the main activity," with one meaning low and five meaning high. The questions which asked participants to rate their moods used a semantic differential

Table 1. T-test comparisons between conventional survey responses of teachers with (Group 1) and without (Group 2) in-school compensatory jobs.

Statement	*Group 1 Mean*	*Group 2 Mean*	*T-Score*
I am satisifed with my occupation	1.6100	2.2071	-2.07*
I perform a vital function in society	1.3500	1.6552	-2.18*
I dislike giving tests	3.3000	2.7586	2.14*
I teach too many classes	2.5500	2.0169	1.03
What I like most about teaching are the classroom discussions	1.6500	2.0090	-1.55

* = (p<.05)
Scale: 1=Strongly agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly disagree

Table 2. T-test comparisons between conventional survey responses of club and team advisors (Group 1) and non-advisors (Group 2).

Statement	*Group 1 Mean*	*Group 2 Mean*	*T-Score*
I am satisifed with my occupation	1.6875	2.1212	-2.02*
I am satisfied with my income	3.6875	4.2059	-2.08*
I would be pleased if my child became a teacher	2.3750	3.0588	-2.18*
I place top priority on student academic performance	1.9375	2.4545	-1.99*
Educating the young is important to me	1.3750	1.7353	-2.04*

* = (p<.05)
Scale: 1=Strongly agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly disagree

scale which placed two antithetical moods at opposite ends. A one indicated that the respondent was very much in the mood located to the left of the scale; three indicated that neither word described the mood; and a five indicated that the respondent was very much in the mood located to the right of the scale.

Two databases were then created using the software program QuickData—one for the traditional 51 conventional surveys and one for 190 ESM surveys. Both databases were analyzed using SPSS/PC to run the following programs: frequencies, t-tests, crosstabulations, and ANOVAs. All differences described as significant are significant at the $p<0.05$ level unless otherwise indicated.

Results

Results from both the ESM and the conventional surveys show that teachers, above all, loved to teach. The results of the conventional survey also indicated that teachers enjoyed teaching. Ninety-six percent of the respondents answered that they either agreed or strongly agreed with the statement, “I enjoy teaching.”

Conventional Survey. Teachers who held an in-school job other than teaching, or who were advisors to a team or club, consistently reported higher levels of job satisfaction. T-tests comparing the responses of teachers who held in-school compensatory jobs with those who did not (see Table 1) revealed that there was a significant difference in their mean scores for the statement, “I am satisfied with my occupation.” The mean for those who did not hold such positions was 2.11 which was significantly higher ($p<.05$) than the mean of 1.65 for those who did, indicating higher levels of satisfaction by those who held such jobs. However, both means show that these teachers were satisfied with their occupation. Those who performed compensatory time jobs had significantly higher levels of agreement (M=1.35) than those who did not (M=1.66) to the statement, “I perform a vital function in society.” Although both groups disagreed with the statement, “I dislike giving tests,” those who held jobs disagreed at a significantly greater level. Although the results were not determined to be significant ($p=.073$), the responses to the statement, “I teach too many classes,” yielded lower means for those who did not have such jobs, indicating lower levels of concern about teaching load. Similarly those who had such jobs agreed more strongly with the statement, “What I like most about teaching are classroom discussions.” Both suggest a trend toward higher levels of satisfaction, concern and involvement for those who held jobs.

The results for t-tests comparing responses for those who were advisors to a school club or team to those who were not (see Table 2) revealed a significant difference in responses to the statement, “I am satisfied with my occupation.” Advisors (M=1.69) agreed more strongly than those who were not advisors (M=2.12). Crosstabulations confirmed this conclusion. The 93.3% of advisors who were very satisfied with their occupations was significantly higher than the 62.5% of non-advisors who agreed with this statement. Further t-tests show a significant difference in satisfaction with income. While both samples disagreed with the statement, “I am satisfied with my income,” advisors did not disagree as strongly (M=3.69) as those who were not advisors (M=4.21). The response to the question, “I would be pleased if my child became a teacher” yielded a significantly higher level of agreement from advisors than from those who were not advisors. The level of agreement by advisors was also significantly higher than the level of agreement by those who were not advisors in response to, “I place top priority on student academic performance.” Regarding “Educating the young is important to me,” the 1.38 mean for advisors showed significantly stronger agreement than the mean of

Table 3. T-test comparisons between conventional survey responses of male (Group 1) and female (Group 2) teachers.

Statement	*Group 1 Mean*	*Group 2 Mean*	*T-Score*
I am satisifed with my income	3.7931	4.3636	-2.04*
I would be more satisfied with less paperwork	1.7931	1.3636	-2.05*
I have enough freedom to teach	1.9643	2.5000	-1.80
I find marking papers a burden	2.2759	1.9091	1.58
Pay incentives would improve teacher morale	1.9310	1.5455	1.66

* = (p<.05)
Scale: 1=Strongly agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly disagree

Table 4. T-test comparisons between conventional survey responses of teachers under (Group 1) and over (Group 2) forty-five years of age.

Statement	*Group 1 Mean*	*Group 2 Mean*	*T-Score*
I have good relations with most of the faculty	2.7778	2.0000	2.30*
I perform a vital function in society	1.8889	1.2762	2.00*
I find marking papers a burden	2.5556	2.0238	1.54

* = (p<.05)
Scale: 1=Strongly agree, 2=Agree, 3=Neutral, 4=Disagree, 5=Strongly disagree

1.74 for those who were not advisors. Although not quite reaching statistical significance (p=.070), the responses to the statement, “If I could choose a career all over again, I would become a teacher,” confirmed the trend: advisors agreed more strongly (M=2.20) than those who were not advisors (M=2.82).

There were also differences between the responses of men and women (see Table 3). Mean responses of men and women indicated that women were significantly less satisfied with their incomes than men. Although both males and females agreed that marking papers was a burden and that they would be more satisfied with less paperwork, women agreed more strongly. The difference in means was even greater for marking papers. The difference in means between gender to the statement, ”I have enough freedom to teach,” was nearly significant (p=.078). Women (M=2.50) expressed greater disagreement with the statement than did men (M=1.96). Although both male (M=1.93) and female (M=1.55) teachers agreed with the statement, “Pay incentives would improve teacher morale,” women agreed more strongly than did males; however, the differences were not statistically significant (p=.107). All these figures indicate lower overall levels of job satisfaction for women.

The subject that teachers taught also influenced their responses. There was a tendency for teachers of the humanities to respond differently than teachers of mathematics and physical sciences. In response to the statement, “If I could choose a career all over again, I would choose teaching,” 61.5% and 60%, of the mathematics and science teachers, respectively, agreed, while only 54.5% and 33.3 %, of the English and social studies teachers, respectively, agreed. In response to the statement, “A teacher really can’t do much because most of a student’s performance depends on his or her home environment,” 70% and 92.3%, of science and mathematics teachers, respectively, disagreed, while 54.5% and 33.3%, of English and social studies teachers, respectively, disagreed.

Job satisfaction seems to increase with age and years of service (see Table 4). T-tests comparing responses of teachers below the age of 45 with those above the age of 45 showed that the responses to the statements, “I have good relations with most of the faculty” and “I perform a vital function in society,” yielded significantly lower means for those teachers over the age of 45, indicating greater levels of agreement by the older teachers.

Increased length of service correlated with higher reported job satisfaction. Crosstabulations which divided the sample into teachers who have taught for 1 to 10 years, 11 to 20 years, and 21 or more years, revealed that in response to the statement, “Pay incentives would improve teacher morale,” there was a nearly significant (p=.073) difference between groups. One hundred percent of those who taught for 1 to 10 years, 95.2% of those who taught for 11 to 20 years, and 68.4% of those who taught for 21 or more years agreed with this statement. A similar pattern occurs in the responses to, “I am satisfied with my income.” Eighty-one point eight percent of those who taught for 1 to 10 years, 76.2% of those who taught for 11 to 20 years, and 70.7% of those who taught for 21 or more years disagreed with this statement. These results indicate that increased length of service correlated with increased satisfaction (or decreased dissatisfaction) with income. Differences between the responses of the groups to the statement, “I do not have enough opportunities to socialize with my colleagues,” were nearly significant (p=.083), with 54.5% of those who taught 1 to 10 years, 50% of those who taught from 11 to 20 years, and only 21.1% of those who taught 21 or more years agreeing with the statement. Younger teachers were more hesitant to assert that they perform a vital function. Crosstabulations indicated that 81.8% of those who taught for 1 to 10 years, 90.5% of those who taught for 11 to 20 years, and 94.7% of those who taught for more than 21 years agreed with the statement, “I perform a vital function in society.” In response to the statement, “If I could choose a career all over again, I would become a teacher,” 36.4% of those who taught for 1 to 10 years, 52.4% of those who taught for 10 to 20 years, and 65.1% of those who taught for more than 21 years, agreed. To the statement, “I find teaching stressful,” 72.7% of those who taught for 1 to 10 years,

Table 5. Analysis of variance of ESM responses by "What was the main thing you were doing?" (Questions).

Question	*Mean during paperwork*	*Mean during teaching*	*Mean during socializing*	*Mean during travel*	*Mean during preparation*
enjoy	3.28***	4.13***	3.95***	2.71***	3.58***
feel good	3.75*	4.24*	4.03*	3.71*	4.00*
concentration	3.83***	4.33***	3.55***	3.29***	4.00***

* = (p<.05), *** = (p<.001)
Scale: 1=low, 5=high

Table 6. Analysis of variance of ESM responses by "What was the main thing you were doing?" (Moods).

Moods	*Mean during paperwork*	*Mean during teaching*	*Mean during socializing*	*Mean during preparation*	*Overall mean*
Happy-Sad	2.44	2.21	2.40	2.33	2.33
Lonely-Sociable	3.19***	3.52***	4.05***	3.00***	3.54***
Helpful-Useless	2.36***	2.07***	3.29***	2.63***	2.42***
Involved-Detached	2.46**	1.95**	2.60**	2.00**	2.13**
Stimulated-Bored	2.97***	2.21***	2.45***	2.53***	2.39***
Worried-Relaxed	3.24*	3.43*	4.00*	3.67*	3.51*

* = (p<.05), ** = (p<.01), *** = (p<.001)
Scale: Semantic Differential Scale (1-5)

66.7% of those who taught for 11 to 20 years, and 42.1% of those who taught for more than 21 years agreed.

The last section of the conventional survey asked respondents to select the three words that best described the moods they would be in when involved in four common workday activities. Happy, involved, and excited were chosen most frequently for "Classroom discussions which seemed successful." "Happy" was one of the words chosen by 70.0% of the teachers, "involved" by 80.0%, and "excited" by 76.0%. The word "happy" was used by 42.0% of the teachers as one of the words to describe their mood when "Socializing with faculty members." For socializing, "relaxed" was used 54.0% of the time, and "sociable" was used 66.0% of the time; however, "involved" and "excited" were chosen by only 10.0% and 28.0% respectively. The word "bored" was chosen by an overwhelming 81.8% to describe their mood during "Faculty meetings." During "Classroom discussions which seemed unsuccessful," 36.0% of the teachers chose the word "weak"; 46.0% of the teachers chose the word "sad"; and 56.0% of the teachers chose the word "worried." While "Doing paperwork," 18.8% of teachers chose the word "sad," and 66.7% chose the word "bored."

Experience Sampling Method. Analysis Of Variance (ANOVA) performed on ESM data demonstrated that, as indicated by the conventional survey, teachers felt best when teaching (see Table 5). The five most common activities teachers reported were, in order of descending frequency, teaching, paperwork, socializing, preparing tests or assignments, and traveling. Responses to the question, "Did you enjoy what you were doing?" varied significantly for different activities. Teaching received the highest score (M=4.13) when compared to the mean scores for all other activities combined (M=3.64). Socializing was also fairly high (M=3.95). The mean response while doing paperwork was 3.28 indicating that, while it was not their favorite activity, teachers did not express dislike either. Traveling (usually to and from school) was the only activity with a mean of less than 3.00. Crosstabulation of the same data showed that, while teaching, responses of "enjoy much" or "enjoy very much" occurred 80.3% of the time. The ANOVA and crosstabulation results were significant at the .001 and .01 levels respectively. Comparisons of the 181 responses to the questions, "Did you feel good about yourself?" and "How well were you concentrating?" provide similar evidence of the significantly greater satisfaction derived when teaching. According to these ANOVAs, the differences between mean responses were significant. Moreover it was demonstrated by crosstabulations that, while teaching, 79.0% of teacher responses to "did you feel good about yourself?" were 4 or 5, indicating strong answers in the affirmative.

ANOVAs and t-tests were performed for the mood ratings in the ESM booklets (see Table 6). The main effects variance using the five most frequent activities was found to be significant for four of the five "rate your mood" questions: lonely to sociable, helpful to useless, involved to detached, stimulated to bored, and worried to relaxed. Though falling short of significance (p=.132) the responses to the "rate your mood from happy to sad" question did echo previous findings in that responses given while teaching indicated the greatest comparative level of happiness (M=2.21). Participants rated their moods as most helpful, most involved, and most stimulated while teaching. As we may have assumed, they felt most sociable while socializing. They also felt more relaxed when socializing than when teaching.

The activity was not the only variable that affected responses. Responses were divided into those that were made during A.M. and P.M. hours. T-tests indicated that the participants felt that their skills were significantly greater in the afternoon (M=4.29) than in the morning (M=3.76). T-tests also showed that teachers rated the activity as being significantly more important to them in the afternoon (M=4.23) than in the morning (M=3.72). Participants also felt significantly more involved in the afternoon than in the morning (p=.015).

The subject that the teachers taught also affected responses. ANOVAs which compared the responses given by mathematics, physical science, English, and social studies teachers indicated that mathematics and science teachers generally gave more positive responses than English and

Table 7. Analysis of variance of ESM responses by subject taught (Questions).

Question	*Mean of Math teachers*	*Mean of Science teachers*	*Mean of English teachers*	*Mean of Social Studies teachers*	*Overall mean*
concentration	4.54***	4.25***	3.97***	3.81***	4.02***
feel good	4.75***	4.58***	4.00***	3.68***	4.04***
enjoy	4.21**	4.33**	3.68**	3.69**	3.81**
challenges	3.86**	3.45**	3.44**	3.12**	3.39**
skills	4.93***	4.70***	3.93***	3.78***	4.08***
important	4.82***	4.36***	3.88***	3.85***	4.05***
success	4.89***	4.55***	3.88***	3.86***	4.07***
interest	3.89***	4.18***	3.45***	3.52***	3.59***
desire to do something else	1.57**	2.35**	2.84**	2.44**	2.48**

** = (p<.01), *** = (p<.001)
Scale: 1=low, 5=high

Table 8. Analysis of variance of ESM responses by subject taught (Moods).

Moods	*Mean of Math teachers*	*Mean of Science teachers*	*Mean of English teachers*	*Mean of Social Studies teachers*	*Overall mean*
Happy-Sad	1.96**	1.83**	2.39**	2.50**	2.33**
Involved-Detached	1.57**	1.92**	2.24**	2.28**	2.13**
Stimulated-Bored	2.00**	2.00**	2.59**	2.40**	2.39**
Worried-Relaxed	4.46***	3.64***	3.29***	3.33***	3.51***
Lonely-Sociable	4.14***	3.50***	3.45***	3.38***	3.54***

** = (p<.01), *** = (p<.001)
Scale: Semantic Differential Scale (1-5)

social studies teachers (see Tables 7 and 8). Mathematics and science teachers, with respective means of 4.54 and 4.25, had significantly (p<.001) higher scores in response to, “How well were you concentrating?” than English and social studies teachers, with respective means of 3.97 and 3.81. This trend towards mathematics and science teachers answering more positively than English and social studies teachers continued. Mathematics and science teachers gave responses which indicated significantly higher (p<.01) levels for enjoyment, challenge, skill, happiness, involvement, stimulation, and sociability than their humanities counterparts. The same split occurred for how good they felt about themselves, importance of the activity, success in activity, interest in activity. Likewise, mathematics and science teachers scored lower in their desire to be doing something else.

The influence of gender on ESM responses was similar to its influence on conventional survey responses (see Table 9). ANOVAs comparing ESM responses by gender and activity display significant differences in overall means for males and females and in the means for males and female during particular activities. Males generally felt higher levels of job satisfaction and motivation. Mean scores indicated that males were happier, enjoyed what they were doing more, were more interested in what they were doing, and had less of a desire to be doing something else. On the other hand, women gave themselves higher scores for levels of success and skill. Significantly different mean scores for males and females indicated that, while teaching, males were happier, rated the importance of the activity as higher, rated their interest in the activity as higher, experienced higher levels of enjoyment, and had less of a desire to be doing something else than women. Socializing results were nearly the opposite; women were happier, rated the activity as more important, rated the activity as being more interesting, experienced higher levels of enjoyment, and had less of a desire to be doing something else. Both groups had positive attitudes towards socializing. Females also felt more challenged (M=4.11) than males (M=2.83) during preparation.

Discussion

The conventional survey data provides much information on characteristics that define teachers who had high levels of job satisfaction and motivation. One factor that had a significant impact on job satisfaction was job responsibility. Teachers who had higher levels of responsibility, usually in the form of compensatory-time work, administrative positions (i.e., dean, department head), or advisorship of a club, had significantly higher levels of satisfaction. The nature of this link cannot be determined from this study. Does job satisfaction increase as a result of responsibility and participation or are individuals with higher levels of motivation and job satisfaction more inclined to assume roles of responsibility? One explanation for the link is provided by the concept of flow. Increased responsibility levels may lead to satisfaction because of the greater involvement, challenge, and control. Thus, those who have greater responsibility levels have come closer to Csikszentmihalyi’s (1990) description of how we attain flow: “this pleasurable state can, in fact be controlled, and not just left to chance, by setting ourselves challenges—tasks that are neither too difficult nor too simple for our abilities.”

The differences between male and female responses were evident in both the ESM and conventional survey results. Women reported lower overall levels of satisfaction. This was unexpected. Paperwork could play a role, as women rated the burden of this activity as being considerably greater than men did. If the women have greater responsibility in the home, this may also contribute to decreased levels of job-satisfaction for women who bear the dual pressure of home and work. However, because there were fewer female science and mathematics teachers, the

Table 9. Analysis of variance of ESM responses by gender and "What were you doing?" (Moods and Questions).

Mood or Question	*Overall mean for males*	*Overall mean for females*	*Mean for males: teaching*	*Mean for females: teaching*	*Mean for males: socializing*	*Mean for females: socializing*
Happy-Sad	2.12*	2.56*	1.91*	2.38*	2.88*	2.08*
Lonely-Sociable	3.41	3.66	3.64	3.45	3.63	4.33
important	3.97	4.01	4.42	4.05	3.57	4.27
interest	3.85*	3.38*	4.23*	3.83*	3.23*	3.83*
enjoy	4.10*	3.65*	4.41*	3.97*	3.57*	4.17*
skills	3.84**	4.23**	4.18**	4.39**	2.57**	3.92**
success	4.00	4.21	3.86	4.07	3.14	3.91
desire to do something else	2.22*	2.81*	1.95*	2.49*	2.57*	2.00*

* = (p<.05), ** = (p<.01)
Scale: Mood—Semantic Differential Scale (1-5); Others—1=low, 5=high

subjects associated with higher satisfaction, we cannot rule out the possibility that it was the subject and not the gender that correlated with satisfaction levels.

The tendency for women to place a greater emphasis on socializing than men may be shaped by societal norms. Whatever the reasons, that the women in this study placed greater value on socializing has several implications, especially when considered along with their lower satisfaction levels. At first glance, this contradicts Nagy & Davis's (1985) notion that minimizing the value of social interaction weakens the social support system and leads to higher levels of burnout. However, it may confirm their conclusion. If the women did not feel sufficiently satisfied with their opportunities to socialize, than their lower satisfaction level may be associated with this social dissatisfaction. Gender differences regarding challenges of preparation, paperwork, and marking papers may also be linked to the socializing differences. Perhaps women take these activities more seriously, and that is why they find them more bothersome or challenging. Similarly if they take these aspects more seriously, it may be that time spent on paperwork detracts from opportunity to socialize. This is an area for further research.

The results revealing the differences in satisfaction between teachers of varying subjects, found in both the traditional and ESM responses, may be due to the school's focus on mathematics and science. Both inside and outside of the school, the positive public perception may give these teachers a better feeling about themselves. Furthermore, it is likely that greater resources are assigned to these areas. The lower levels of paperwork involved in teaching mathematics and science may have an effect on job motivation and satisfaction. However, the mean scores for attitudes towards paperwork, indicating that teachers did not express dislike towards paperwork, show that if paperwork did indeed lower levels of motivation and satisfaction, its effect was minimal. Flow provides another explanation for the discrepancy, since teachers of mathematics and science reported higher levels of concentration and challenge than teachers of English and social studies.

It can be inferred from the responses to the conventional survey that increased length of service correlated with greater satisfaction with salary, higher levels of self-esteem, higher levels of respect for the teaching profession, and decreased levels of stress. These may be used as measures of job satisfaction and motivation. The findings regarding the high satisfaction levels of teachers who have been working for longer may be related to higher salaries. Entry-level salaries are about half the maximum salary. The beginning salaries had been raised in the mid 1980s to attract younger people. However in the past years, the number of salary steps needed to reach maximum was increased, and the greatest percentage of increase occurred at the highest salary step. In addition, younger teachers are under a different pension policy which provides much less security for old-age (New York Teacher, 1995).

The data also supports the belief that stress levels decrease with years of teaching experience (Nagy & Davis, 1985). In many professions, increased length of service may lead to boredom and dissatisfaction with an occupation; however, this is not supported by this study. One possible explanation is that teachers have enough freedom to vary their work and alter the level of challenge. "New courses, new curricula, adequate participation in decision making, experimentation with teaching methods, and learning experiences are but a few examples of possibilities for initial and continuous involvement" (Knoop, 1986). This explanation, which again can be linked to flow, may account for why levels of motivation do not decrease in teaching, but not for why they increase. The decrease in stress may arise from the heightened ability to deal with various situations that comes with experience. Since these results regarding age were unanticipated and contradict common perceptions, this is an area for more inquiry.

Results which indicated that teachers enjoyed teaching more than any other activity were expected. The notion that the levels of challenge, concentration, and control required for teaching are greater than those needed for other activities was confirmed. Teaching seems to lend itself to the attainment of flow. While in the conventional survey slightly less than half of the teachers indicated that they would like to have more opportunity to socialize with colleagues, ESM results indicated that socializing generally did not lead to motivation and satisfaction levels that were as high as those found in teaching. Nevertheless, it is possible that more relaxation with colleagues would refresh teachers so that teaching time could be even more rewarding.

Data from both the ESM and the conventional survey suggest that in general the teachers in the sample were very satisfied with their occupations. These findings contrasted sharply with the study of teachers in Los Angeles using the CES-D depression scale. It must be restated, however, that the sample was constrained by the fact that the teachers all taught at a selective magnet school which would probably result in increased levels of satisfaction when compared with teachers in other urban schools. Furthermore, the ESM sample was probably biased toward commitment and involvement as evidenced by the teacher's desire to help the researcher by participating. This is a possible reason burnout was not manifested in any of the ESM respondents.

Since teachers reported that they were involved, excited, and happy during successful classroom discussions, it would appear that reduction in class size would help

promote job satisfaction by facilitating more participation. Though respondents were asked to indicate whether they were lecturing or discussing while teaching, they did not make enough of a distinction to permit testing the comparisons proposed by Greenwood and Soars (1973). Subsequent ESM experiments should be designed in this area. The importance of the classroom experience in teacher satisfaction confirms the conclusion that the gratification of higher-order needs is most important. Nonetheless, while Sylvia and Hutchinson denigrated the advantages of pay incentives, responses to the conventional survey suggest that teachers felt that pay incentives would improve morale. Teachers, especially younger ones, also reported that they were not satisfied with their incomes. These results warrant a reexamination of the merits of pay incentives as a means for improving teacher motivation.

Although satisfaction seemed to be more associated with personal factors, the influence of environmental factors cannot be ruled out. If the atmosphere provides greater support for mathematics and science teachers, if financial rewards favor older teachers, and if paperwork is more burdensome for women, these are important environmental concerns. Though no single activity besides faculty meetings was linked to particularly low levels of motivation and satisfaction, when, in the conventional survey, teachers were asked to select three words to describe their mood while doing paperwork, many chose the words bored and sad. Teaching must involve some paperwork. The teachers seem to acknowledge this when they are involved in the activity, even though they rated their mood negatively when asked about the activity. This discrepancy may also relate to the contrast between positive results of the study and reports about low morale. It may be that teachers describe themselves and their work differently from the way they actually feel on the job.

It may be necessary to look beyond the school's walls, particularly to questions of esteem and support networks, to identify other higher-order needs. For example, researchers of teacher motivation and satisfaction should try to gauge the effects of media reporting, outside perceptions, and family and leisure involvement on teacher morale.

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