

Stressors and Effectiveness of Teachers: A Model of Managing Stress

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Abstract: In the contemporary world, stress is a psychological phenomenon experienced by teachers in higher educational institutions which decreases their effectiveness, and it must be identified and recognised. The present study focused on the stressors which cause stress amongst the teachers in relation to their effectiveness. The stressors include self, students, colleagues, family members, parents, and higher authorities. The study identified the latent factors associated with teacher effectiveness. It is also attempted to develop a model of managing stress which would benefit the teachers as well as the higher educational institutions when applied effectively. It is based on primary data collected from a sample of 61 Post graduate teachers serving in Hyderabad, Telangana State. Statistical techniques such as descriptive statistics, analysis of variance, factor analysis and regression analysis were used to analyse the data. The results revealed that there is a significant relationship between the stressors which cause stress in teachers and the teacher effectiveness. A model of managing stress has been developed in the present study wherein the psychological needs of the teacher have to be catered to, for reducing stress and in turn increase teacher effectiveness. A teacher under stress is hardly an effective employee, and hence educational institutions should provide an environment conducive to increase teacher effectiveness.

Keywords: Teacher, stressors, stress, effectiveness and educational institutions

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I. Introduction

Education has always been associated with society. The goals of a teaching profession and of the teachers should be aligned with the goals of a nation. In the present times, the ability of a teacher to improve the efficiency and effectiveness of a student has become a very important point of research. A teacher is a fulcrum in the system of education. Teachers play different roles in and outside the educational institutions. They have to endure stress caused by stressors which include self, students, colleagues, family members, parents, and higher authorities. Effectiveness of a teacher in a higher educational institution depends on identifying and eliminating the stress arising from the stressors. Teachers need to equip with skills and capabilities to manage stress in order to keep stride with the dynamically changing environment in terms of teaching techniques, classroom situations, etc. Thus, the role of management in an educational institution is to act as a facilitator and provide the required support in order to increase teacher effectiveness.

A review of the literature on the subject of teacher's stress and its relation to the various components of teacher's effectiveness, at the post-graduate level in India has revealed that the relative studies are scanty. There seems to be a research gap in terms of a unified approach in dealing with the concerned concepts and attributes. The present study focuses on this subject, in the context of the changing dynamics in the field.

In this scenario, a study of the Teacher's stress in various higher educational institutions and the effectiveness of teachers assume crucial importance. It would contribute towards the quality enhancement of higher educational institutions which is the need of the hour. In view of the research gaps observed, the present study focuses on teacher's stress and its impact on their effectiveness. It is also attempted to evolve a model of stress which benefits the teachers and the institutions when applied in an intensive manner.

This study has statistical validity in terms of sample size and the tools used for data analysis. The scope of the study is confined to post-graduate teachers of educational institutions in Hyderabad, Telangana State, India.

1.1 objectives

The objectives of the study are:

- a) To analyse the demographic variables of the sample of teachers selected;
- b) to identify the various latent factors concerning teacher effectiveness;

- c) to study the relationship between the teacher effectiveness and the teacher's stress; and
- d) to develop a model of managing stress in the educational field, based on the results of the study.

1.2 hypotheses

Keeping in view the objectives, the research hypotheses have been formulated thus:

- i) The attributes, having a bearing on the effectiveness of the teachers, have latent and interdependent factors associated with them.
- ii) There is a significant relationship between the latent factors of effectiveness of the teachers and their stressors.
- iii) There is a significant relationship between intrapersonal latent factor of effectiveness of the teachers and their stressors.
- iv) There is a significant relationship between teaching methods latent factor of effectiveness of the teachers and their stressors.
- v) There is a significant relationship between inspiring latent factor of effectiveness of the teachers and their stressors.
- vi) There is a significant relationship between affiliation latent factor of effectiveness of the teachers and their stressors.
- vii) There is a significant relationship between efficient latent factor of effectiveness of the teachers and their stressors.
- viii) There is a significant relationship between institutional latent factors of effectiveness of the teachers and their stressors.

1.3 sample design

There were 157 higher educational institutions (teaching post-graduate students) in Hyderabad, Telangana, India, as at the end of March 2017 (websites of AICTE, UGC and Government of Telangana). These are found to be located in 7 clusters geographically. From each cluster one college has been selected at random for the study. From each selected college, 10 teachers have been selected at random for administering a structured questionnaire for collection of data. When it was attempted to approach the sample of respondents, fully filled-in questionnaires were received from 61 teachers which constituted the final sample. This sample was considered as adequate for a valid statistical analysis based on the appropriateness of central limit theorem and the norm that a sample size of 30 or more would approximately have a normal distribution of the relative data. Statistical tools, viz., descriptive statistics, analysis of variance, factor analysis and regression analysis, were used in the study by applying SPSS 20 software package.

As for the succeeding structure of the study, Section 2 deals with an explanation of the concepts of stress and teacher effectiveness. In Section 3 the relevant studies on the subject have been reviewed. Section 4 covers data analysis and results. Section 5 is devoted to the development of a Model for managing stress. Section 6 gives the concluding observations.

II. Stress And Teacher Effectiveness

Stress has been defined as an 'unpleasant emotional state fraught with tension, frustration, anxiety and emotional exhaustion' (Kyriacou, 2001, p. 27). The Health and Safety Executive (2004) define stress in terms of excessive pressure or demands but also recognise the idea that a certain amount of stress is beneficial and necessary. They regard stress as the intervening factor occurring as a reaction to an accumulation of stressors having emotional, behavioural and physiological components (Bell et al, 2000, p. 131). Stressors include all aversive circumstances that threaten the well-being of a person but are prone to individual differences in appraisal (Evans and Cohen, 1987).

Examining definitions of stress, Cox (1978) has described three classes of definitions. Stress can be thought of as a response to an extreme stimulus, with the stressor itself and as an intervening variable. The mismatch between personal resources and environmental demands leads to the condition called "Stress".

Teaching effectiveness is important as the emphasis on quality in higher education has increased. Effective teaching helps student learning, and it does not occur by chance. Effective teachers are good at what they do because they evaluate their practice which is a professional responsibility to enhance student learning.

Regarding teaching effectiveness, Beck (2005) identified twelve potential sources of evidence, which are: student ratings (e.g. on teaching), peer reviews, self-reviews, videos of practice, interviews with students, alumni, employer and administrator ratings, teaching awards and scholarship, learning outcome measures, and maintenance of teaching portfolios. These sources provide a diverse range of measures of teaching effectiveness. Institutions, encourage a broad range of sources for good teaching practice. The source used depends on why teaching effectiveness is being measured. For example, if the intention of the supervisor is promotion then he/she may perform a review by using criteria which aid in deciding on the academic's effectiveness. If the

objective is to improve teaching practice and to modify the teaching plan or structure then a different set of criteria is applied. For example, student evaluations may be used to determine which aspects of teaching are effective.

Evaluations to improve teaching practice and design are referred to as formative evaluation, while evaluations used in making decisions (for example, for promotion) are referred to as summative evaluations of teaching effectiveness.

III. Review Of Literature

Cameron M. and Andre A. R. (2005) have derived a model of the stress cycle showing a strong association between teacher stressors and emotional responses exhibiting a negative orientation. This confirmed the significance of teachers' coping mechanisms, personality mediators, and burnout potential.

In a study, Dunham (1978) identified three common stress situations, viz., (1) reorganization of schools into comprehensive types (2) role conflict and role ambiguity and (3) poor working conditions like inadequate building and high noise levels. As per Cox et al. (1978), a major percent of teachers considered "work" as the major source of stress in their lives.

It was found that the teacher's effectiveness was positively related with flexibility, fluency, originality, composite creativity and intelligence. In particular, creativity and intelligence, taken jointly, were considered better predictors of teaching effectiveness than separately, Singh (1991). Bose (1993) opined that a positive significant relationship exists between teacher effectiveness and the predictor variables viz., intelligence, teaching attitude, self-confidence and previous academic achievement. The study of Edwin (1991) found that there was a relationship between being perceived as an effective or ineffective teacher and years at current site and also that performance of a teacher perceived as effective increased at a steady rate until mid-career and then drops during late-phase of career. On the other hand, Srivastava K. and Srivastava A.K., (1985), concluded that there was no association between perceived stress and the biographical variables of age, sex, length of service and position of responsibility.

The performing skills and their effectiveness differed significantly in the case of the female teachers of government and private colleges; there were also differences of morale between the high-performance skill and the low performance skill of government school teachers (Nautiyal, 1992).

Jarvis, M. (2002) attempted to probe into the teacher stress and effective coping strategies. Larchick and Chance (2002) found that, on a personal level, teacher stress can affect their health, well-being and performance.

Merrow (1999) examined national and state efforts to recruit new teachers and concluded that the teacher shortage problem was due to the inability to retain teachers, and not related to the recruitment mechanism.

Data of 444 secondary teachers in Barbados revealed that the difficulties associated with instructional and managerial demands were perceived as the most stressful aspects of their work (Payne and Furnham, 1987).

In a study concerning Chinese student-teachers, Chan (2002) found that 35% of them were psychologically distressed, but self-efficacy was a predictor for sleep problems and anxiety, and social support was a major coping strategy for distress.

In a study relating to the elementary school teachers in California (Kyriacou and Sutcliffe, 1978), the sources of dissatisfaction were found to be: (1) supervisory duties at school; (2) excessive clerical work; (3) inadequate salary; and (4) negative student attitude towards learning. The same authors (1979) identified four factors for teachers' stress viz., pupil's misbehaviour, poor working conditions, time pressure and poor school ethos.

Pajak and Blase (1989) identified certain factors to explain the effectiveness and job satisfaction of secondary agricultural instructors, which were further used by Bruening and Hoover (1991). They developed an instrument consisting of three scales to measure teacher effectiveness, job satisfaction and the teachers' perception of the way personal life factors influenced their performance as teachers.

First-level executives of a large industrial organization revealed that stress experience of the executives increased with advancing age (Beena and Poduval, 1991). On the other hand, it was concluded that young individuals between 20 and 30 years of age reported twice as much stress when compared to older individuals (PareekUdai, 1993).

It was recommended that more research was needed to examine the complexities of professional satisfaction and its relationship to teacher stress, which may have some features unique to the profession (Chalmers, A. 2004).

From the literature review the concept of teacher stress and its relationship with the teacher effectiveness is dynamic in nature needing further probe. The various attributes studied included demographic and personality factors. It is felt that there is a need to study the stressors which cause stress amongst the post-graduate teachers in relation to their effectiveness in higher educational institutions, and the present study focuses on this aspect.

IV. Data Analysis and Results

Teacher Effectiveness and related attributes are analysed herein. The responses have been obtained from the sample of higher education teachers using mostly the Likert scale with labels. The reliability of the data has been tested using Cronbach's alpha which is found to be .812. This value, being above 0.7, indicates the internal consistency of the responses (Nunnally 1978). Initially, the demographic factors of the sample of teachers are analysed. Next, it is attempted to identify the underlying factors concerning teacher effectiveness and the relation between stress and teacher's effectiveness was probed into. Based on the findings, a Model of managing Stress has been developed for using it as a means to improve the effectiveness of the teachers in higher educational institutions.

The data on the demographic factors reveals that out of the total sample of 61 PG teachers, 15(24.6%) constitute male members while the rest of 46 (75.4%) comprise female teachers. Thus, majority of the sample represented female teachers. Regarding age, the distribution of the teachers is relatively skewed towards the younger group with 15 (24.6%) in the age group of below 30 years, and 18 (29.5%) in the age group of 30-39 years. The modal age group is 40-49 years with 19 (31.1%) members belonging therein. A small number of 9teachers (14.8%) are in the age group of 50 years and above.

The data on the experience of teachers indicates that, majority of the respondents i.e. 30 (49.2%) have less than 5 years of experience, and 10 (16.4%) belong to the group of 5-9 years of experience. Out of the remaining members, 16 (26.2%) have 10-14 years of experience, 3 (4.9%) have 15-19 years of experience and 2 (3.3%) possess experience of 20-24 years.

An analysis of the designations of the respondents shows that two-thirds of them i.e. 41 (67.2%) are Lecturers, and 11 (18.0%) are Assistant Professors. The others are a smaller number of 4 (6.6%) Associate Professors, 2 (3.3%) Professors, and 3(4.9%) Programmers. Among these, 55 (90.2%) are on full-time and the balance of 6 (9.8%) are on part-time basis.

Table1: Respondents: Frequency distribution of Demographic Factors

S. No.	Variable	Category	Frequency	Percent
1	Gender	Male	15	24.6
		Female	46	75.4
		Total	61	100.0
2	Age	<30	15	24.6
		30-39	18	29.5
		40-49	19	31.1
		50 and Above	09	14.8
		Total	61	100.0
3	Experience	<5	30	49.2
		5-9	10	16.4
		10-14	16	25.4
		15-19	3	4.9
		20-24	2	3.3
		Total	61	100.0
4	Designation	Professor	2	3.3
		Associate Professor	4	6.6
		Assistant Professor	11	18.0
		Lecturer	41	67.2
		Programmer	3	4.9
Total	61	100.0		
5	Employment Status	Full Time	55	90.2
		Part Time	6	9.8
		Total	61	100.0

The number of attributes, having a bearing on the effectiveness of the teachers, is quite large and are reduced herein into a smaller and manageable number of latent and interdependent factors associated with them, by using exploratory factor analysis (EFA) method. This facilitates determining the underlying structure of teacher effectiveness. To validate the use of factor analysis, Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy is found. The value is found to be 0.619, and being more than 0.5 it indicates multivariate normality among the original variables (Naresh Malhotra, 2011).

The questionnaire has 29 items and taking these as original variables the Principal Component Analysis (PCA) extraction method has been applied for extraction of the underlying factors. Varimax rotation method has been selected for this, which showed six factors having face validity. This complies approximately with the norm of six original variables for a factor on the average. Also, the cumulative percentage of variance criterion envisages that, for social sciences, 50-60% of variance explained is sufficing (Hair et al. 1995; Pett, Lackey, & Sullivan, 2003) while the six factors extracted cumulatively contribute to 80.06% of the total variance in the

data. Therefore, for the study, the Exploratory Factor Analysis, with the aid of extraction technique PCA and the rotation method Varimax, based on six factors has been carried out. The output is given in Table 2.

Table 2: Eigen Values for the Extracted Factors

Rotation Sums of Squared Loadings			
S. No.	Total	% of Variance	Cumulative %
1	5.756	19.848	19.848
2	4.336	14.952	34.800
3	4.001	13.797	48.597
4	3.499	12.066	60.663
5	2.878	9.924	70.587
6	2.748	9.476	80.063

Based on the factor loadings, six underlying factors have been identified as shown in Table 3. These factors are - Intrapersonal (which explained 19.8 percent of variance), Teaching Strategies (which revealed 14.952 percent of variation), Inspiring (which spelt 13.797 percent of variation), Affiliation (revealing 12.066 percent of variation), Efficient (accounting for 9.924 per cent of variation), and finally Institutional (expressing 9.476 percent of variation). Hence the total variation is accounted to 80.063 percent. From this analysis, the hypothesis that ‘the attributes, having a bearing on the teacher effectiveness, have latent and interdependent factors associated with them’, is accepted.

	Component					
	Self-determination: Intrapersonal	Skill seeker: Teaching methods	Inspiring	Affiliation	Efficient	Survivors: Institutional
1) I summarize lessons I teach, in the end.	.848	.226	.071	-.041	.275	.083
2) I do possess pleasing manners.	.725	.279	.000	.236	.174	.265
3) I am concerned of class-discipline.	.687	.112	.513	-.166	.012	-.228
4) We get chance to be creative in the institution.	.661	.342	-.063	.393	-.021	.392
5) I contact experts/senior teachers to update my knowledge.	.652	.207	.276	.160	-.006	-.187
6) I have a sense of duty & responsibility.	.620	.422	.133	.054	.182	.305
7) I value my academic achievements.	.613	.336	.119	.390	.186	.176
8) I have good knowledge of human development & learning.	.607	.157	-.167	.523	.144	.078
9) I have pleasant and distinct voice.	.574	.130	-.037	.340	.313	.513
10) Correction of papers is a part of academics.	.224	.905	-.037	.091	-.060	.083
11) It is necessary to give every student individual attention.	.214	.807	-.146	.318	.071	.061
12) I use teaching aids to make my teaching more effective.	.211	.671	.262	.082	.039	.395
13) It is my duty to get a good name to my institution.	.353	.655	.105	-.020	.511	-.042
14) I make my teaching interesting with examples.	.534	.565	-.016	.378	.129	.126
15) I adjust my teaching time well.	.496	.520	.115	.402	-.030	.320
16) I discuss the subject	.013	.024	.872	.029	.276	.020

matter with ease and confidence.						
17) I go to the institution neatly and smartly dressed.	.058	-.154	.840	-.045	.251	.060
18) It is useful to sit through the students' workshops, guest lectures etc.	.018	.132	.810	.211	-.077	-.079
19) I do contribute in professional and scholarly meetings.	.562	-.066	.650	-.108	-.232	.151
20) My gestures in the classroom are pleasant.	.413	.323	.647	.175	-.354	.148
21) Appreciation, respect, consideration for work done.	.200	.297	.165	.853	.110	-.025
22) Students are hard to be motivated to be interested.	.185	.189	.069	.793	.361	.166
23) There is help and advice for problems.	-.029	-.014	.606	.611	-.089	-.104
24) I do not mind to come early or stay back late.	.139	-.069	-.002	.039	.803	.368
25) I do discuss students' performance in tests with them.	.286	.219	.143	.413	.711	-.034
26) I plan my lessons caring for diversity in students.	.331	.447	.285	.287	.591	-.229
27) I try to attend the institution even if I am sick.	.100	.140	-.018	-.127	-.017	.811
28) I feel a sense of pride in working in my institution.	.343	.464	.084	.191	.216	.653
29) My interests and needs are satisfied in this organization.	-.139	-.041	-.039	.376	.523	.619

Table 3: Rotated component matrix and identification factors

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

The various stressors which contribute to the stress amongst the teachers are Self, Students, Family members, Colleagues, Parents and Higher Authorities. Their relationship to the latent factors embedded within the effectiveness of teachers is investigated here using regression analysis.

The regression model used takes stressors as the independent variables (Self, Students, Family members, Colleagues, Parents and Higher Authorities) and the six latent factors (Interpersonal, Teaching strategies, Inspiring, Affiliation, Efficient and Institutional) which have been extracted indicating the characteristics of Teacher Effectiveness as dependant variables one at a time. Thus, there will be regression equations. The output has been analysed as follows.

Table 4 shows that the value of R² is very less. But in Social Research particularly high values of R² should not be expected. This is because there are so many factors, which might contribute to influence a variable that one cannot reasonably expect one to be able to analyse or measure. A low R² does not necessarily mean that there is no association between the variables, nor is there the absence of significant predictors of the criterion (Norusis, 1985)

When the goodness of fit of the regression model is tested with F statistic, the output given in Table 5 shows the value of F as 3.32 with a level of significance (0.0074 for the calculated F) being less than the critical level of significance of 0.05. Hence, we conclude that the regression model is a good fit.

Table 4: Regression Summary: Stressors and Intrapersonal factor of Teacher Effectiveness

R	R Square	Adjusted R Square	Std. Error of the Estimate
0.519	0.270	0.188	0.516

Table 5: Anova: Stressors and Intrapersonal factor of Teacher Effectiveness

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	6	5.30276009	0.883793348	3.321289472	0.007413668
Residual	55	14.36937106	0.266099464		
Total	60	19.67213115			

The regression statistics (Table 6) reveal that the p-values are significant at 5 per cent level for the intercept and the coefficients for Colleagues and Higher authorities which are thus interpretable. For the other coefficients, the p-values are greater than 0.05 level of significance and hence are omitted in the regression equation.

Table 6: Regression Statistics: Stressors and Intrapersonal factor of Teacher Effectiveness

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	4.028193196	0.286467575	14.06160261	1.08024E-19*
Self (X ₁)	0.037531982	0.113049496	0.331996012	0.741177485
Students (X ₂)	0.081648486	0.138876707	0.58792066	0.559036339
Colleagues(X ₃)	-0.386615579	0.11669805	-3.312956651	0.00165197*
Family Members (X ₄)	-0.003000282	0.127959494	-0.023447126	0.981380044
Parents (X ₅)	-0.21088389	0.217509893	-0.969537003	0.336600022
Higher authorities(X ₆)	0.306185054	0.089967749	3.403275715	0.001261361*

* Significant at 5 per cent level.

The regression equation is:

$$Y_1 = 4.03 - 0.39X_3 + 0.306X_6 \quad \dots\dots\dots (1)$$

where Y₁ = Intrapersonal factor of Teacher effectiveness

Thus, the intrapersonal behaviour of a teacher towards work is mostly influenced by stressors arising from colleagues, followed by higher authorities. Hence, the research hypotheses that there is a significant relationship between Intrapersonal factor of Teacher effectiveness and the stress arising from colleagues and higher authorities is accepted.

With respect to the Stressors and Teaching Methods factor of Teacher Effectiveness, the goodness of fit of the regression model is tested with F statistic. The output in Table 7 shows the value of F as 2.38 with a level of significance (0.041 for the calculated F) being less than the critical level of significance of 0.05. Hence, we conclude that the regression model is a good fit.

Table 7: Regression Summary: Stressors and Teaching Methods factor of Teacher Effectiveness

	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	6	3.976850021	0.662808337	2.379836221	0.041110379
Residual	55	15.03954342	0.278510063		
Total	61	19.01639344			

The regression statistics (Table 8) reveal that the p-values are significant at 5 per cent level for the intercept and the coefficients for Colleagues and Family members and are interpretable. For the other coefficients, the p-values are greater than 0.05 level of significance and hence are omitted in the regression equation.

Table 8: Regression Statistics: Stressors and Teaching Methods

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	3.566467634	0.293071723	12.1692656	4.20067E-17*
Self (X ₁)	0.01732294	0.115655709	0.149780238	0.881496034
Students (X ₂)	0.104750547	0.142078335	0.73727319	0.464147802
Colleagues (X ₃)	-0.347731193	0.119388376	-2.912605106	0.0052025*
Family Members (X ₄)	0.296754787	0.130909438	2.266870828	0.02742604*
Parents (X ₅)	0.024943508	0.222524309	0.112093405	0.911164991
Higher authorities (X ₆)	0.120647259	0.092041841	1.31078711	0.195477067

* Significant at 5 per cent level.

The regression equation is:

$$Y_2 = 3.57 - 0.35X_3 + 0.29X_4 \quad \dots\dots\dots (2)$$

where Y₂ = Teaching methods

Thus, the Teaching methods adopted by a teacher towards work is mostly influenced by stressors such as colleagues, followed by family members and the relative research hypothesis is accepted.

For the Stressors and the Inspiring factor of Teacher effectiveness, the goodness of fit of the regression model is tested with F statistic (Table 9). The value of F is 2.11 with a level of significance (0.068 for the calculated F) which is less than the critical level of significance of 0.05. Hence, the regression model is considered as a good fit.

Table 9: Regression Summary: Stressors and Inspiring factor of Teacher Effectiveness

ANOVA	Df	SS	MS	F	Significance F
Regression	6	4.350860536	0.725143423	2.105259723	0.067578038
Residual	55	18.59995914	0.344443688		
Total	61	22.95081967			

The regression statistics (Table 10) reveal that the p-values are significant at 5 per cent level for the intercept and the coefficients of Colleagues and Higher Authorities and are interpretable. For the other coefficients, the p-values are greater than 0.05 level of significance and hence are omitted in the regression equation.

Table 10: Regression Statistics: Stressors and Inspiring factor of Teacher Effectiveness

	Coefficients	Standard Error	t Stat	P-value
Intercept	3.859030549	0.325921182	11.84037971	1.24101E-16*
Self (X ₁)	0.049675592	0.128619182	0.386222265	0.700849671
Students (X ₂)	0.018654961	0.158003434	0.11806681	0.906452808
Colleagues (X ₃)	-0.337524466	0.132770232	-2.542169746	0.013918031*
Family Members (X ₄)	0.07196822	0.145582653	0.494346125	0.623066899
Parents (X ₅)	-0.078926869	0.247466337	-0.318939821	0.751002607
Higher authorities (X ₆)	0.270118656	0.102358513	2.638946664	0.010845534*

* Significant at 5 per cent level.

The regression equation is:

$$Y_3 = 3.86 - 0.34X_3 + 0.27X_6 \dots\dots\dots (3)$$

where Y₃ = Inspiring factor of Teacher effectiveness

Thus, the Inspiring attitude of the teacher towards the students is mostly influenced by the stressors of colleagues, followed by higher authorities, and the relative research hypotheses are accepted.

When the goodness of fit for the stressors and affiliation factor of teacher effectiveness of the regression model is tested with F statistic, the output (Table 11) shows the value of F as 2.74 with a level of significance (0.021 for the calculated F) which is less than the critical level of significance of 0.05. Hence, we conclude that the regression model is a good fit.

Table 11: Regression Summary: Stressors and Affiliation factor of Teacher Effectiveness

ANOVA	Df	SS	MS	F	Significance F
Regression	6	5.652738642	0.942123107	2.743458549	0.021195459
Residual	55	18.54398267	0.343407086		
Total	61	24.19672131			

The regression statistics (Table 12) reveal that the p-values are significant at 5 per cent level for the intercept and the coefficients of Colleagues and Higher authorities and are interpretable. For the other coefficients, the p-values are greater than 0.05 level of significance and hence are omitted in the regression equation.

Table 12: Regression Statistics: Affiliation and Stressors

	Coefficients	Standard Error	t Stat	P-value
Intercept	3.80584817	0.325430383	11.69481513	2.01335E-16*
Self (X ₁)	0.101875649	0.128425497	0.793266531	0.431094383
Students (X ₂)	0.058216765	0.1577655	0.369008209	0.71356456
Colleagues (X ₃)	-0.430631968	0.132570295	-3.248329247	0.001998944*
Family Members (X ₄)	0.121204728	0.145363423	0.833804857	0.408064187
Parents (X ₅)	-0.060755631	0.247093682	-0.245880958	0.806706568
Higher authorities (X ₆)	0.265918523	0.102204373	2.601831157	0.011942122*

* Significant at 5 per cent level.

The regression equation is:

$$Y_4 = 3.81 - 0.43X_3 + 0.27X_6 \quad \dots\dots\dots (4)$$

where Y_4 = Affiliation factor of Teacher effectiveness

Thus, the Affiliation attitude of the teacher towards the students is mostly influenced by the stressors of colleagues, followed by higher authorities, and the relative research hypotheses are accepted.

With regard to the stressor and efficient factor of teacher effectiveness, the goodness of fit of the regression model is tested with F statistic. The output (Table 13) shows the value of F as 1.35 with a level of significance (0.025 for the calculated F) which is less than the critical level of significance of 0.05. Hence, we conclude that the regression model is a good fit.

Table 13: Regression Summary: Stressors and Efficient factor of Teacher Effectiveness

ANOVA					
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	6	2.566865501	0.427810917	1.345408279	0.0253489607
Residual	55	17.17083942	0.317978508		
Total	61	19.73770492			

The regression statistics (Table 14) reveal that the p-values are significant at 5 per cent level for the intercept and the coefficient for Higher Authorities and are interpretable. For the other coefficients, the p-values are greater than 0.05 level of significance and hence are omitted in the regression equation.

Table 14: Regression Statistics: Efficient and Stressors

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	3.695581652	0.313149956	11.80131622	1.41271E-16
Self (X_1)	0.07910622	0.123579238	0.640125485	0.524797906
Students (X_2)	0.026947237	0.151812068	0.17750392	0.859776747
Colleagues (X_3)	-0.209080498	0.127567628	-1.6389777	0.107031902
Family Members (X_4)	0.080220269	0.139877995	0.573501706	0.568685934
Parents (X_5)	-0.034690364	0.237769365	-0.145899218	0.884544225
Higher authorities (X_6)	0.219315294	0.098347593	2.230001642	0.029925566*

* Significant at 5 per cent level.

The regression equation is:

$$Y_5 = 3.70 + 0.22X_6 \quad \dots\dots\dots (5)$$

where Y_5 = Efficiency factor of Teacher effectiveness

Thus, the Efficiency of the teacher is influenced by stressor of higher authorities, and the relative research hypothesis is accepted.

When the goodness of fit of the regression model is tested with F statistic for the Stressors and Intrapersonal factor of Teacher Effectiveness, the output (Table 15) shows the value of F as 4.99 with a level of significance (7.43532E-05 for the calculated F) which is less than the critical level of significance of 0.05. Hence, we conclude that the regression model is a good fit.

Table 15: Regression Summary: Stressors and Institutional factor of Teacher Effectiveness

ANOVA					
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>
Regression	6	41.31055694	6.885092824	4.99011583	7.43532E-05
Residual	55	354.5947461	1.379746094		
Total	61	395.905303			

The regression statistics (Table 16) reveal that the p-values are significant at 5 per cent level for the intercept and the coefficients for Family Members, Parents and Higher Authorities and are interpretable. For the other coefficients, the p-values are greater than 0.05 level of significance and hence are omitted in the regression equation.

Table 16: Regression Statistics: Institutional and Stressors

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>
Intercept	2.140264606	0.180970541	11.82659118	4.68095E-26*
Self (X ₁)	0.119803505	0.070164477	1.707466663	0.088943015
Students (X ₂)	0.00062075	0.080008792	0.007758524	0.993815675
Colleagues (X ₃)	0.02689543	0.07592911	0.354217641	0.723466234
Family Members (X ₄)	-0.05383978	0.069752377	-0.771870184	0.440900482
Parents (X ₅)	-0.233299409	0.073285592	-3.183428021	0.001634702*
Higher authorities (X ₆)	0.224444915	0.063153768	3.553943401	0.000451484*

* Significant at 5 per cent level.

The regression equation is:

$$Y_6 = 2.14 + 0.12X_1 + 0.23X_5 + 0.22X_6 \quad \dots\dots (6)$$

where Y₆ = Institutional factor of Teacher effectiveness

Thus, the institutional aspect is mostly influenced by stressors such as Self, followed by Parents and Higher authorities. Hence, the research hypotheses that there is a significant relationship between Institutional and their Stressors is accepted.

V. Model For Managing Stress

The model for managing stress is formulated with the regression equations 1 to 6 as follows:

$$Y_1 = 4.03 - 0.39X_3 + 0.306X_6 \quad \dots (1)$$

$$Y_2 = 3.57 - 0.35X_3 + 0.29X_4 \quad \dots (2)$$

$$Y_3 = 3.86 - 0.34X_3 + 0.27X_6 \quad \dots (3)$$

$$Y_4 = 3.81 - 0.43X_3 + 0.27X_6 \quad \dots (4)$$

$$Y_5 = 3.70 + 0.22X_6 \quad \dots (5)$$

$$Y_6 = 2.14 + 0.12X_1 + 0.23X_5 + 0.22X_6 \quad \dots (6)$$

where Y₁ = Intra-personalfactor of teacher effectiveness

Y₂ = Teaching methods

Y₃ = Inspiringfactor of teacher effectiveness

Y₄ = Affiliation factor of teacher effectiveness

Y₅ = Efficiency factor of teacher effectiveness

Y₆ = Institutional factor of teacher effectiveness

X₁ = Self

X₃ = Colleagues

X₄ = Family Members

X₅ = Parents of students

X₆ = Higher authorities

From this model, it is seen that, among the factors of teacher effectiveness, the interpersonal, inspiring, and affiliation factors (equations 1, 3, 4) are influenced by the stress emanating from colleagues and higher authorities. An understanding and team spirit among the colleagues and a supportive approach of the higher authorities would enhance the effectiveness of teachers significantly.

Teaching methods (equation 2) are affected by the stressors arising from colleagues and family members. Cooperation from the colleagues and family members would enhance the utility of the teaching methods. The efficiency factor of teacher effectiveness(equation 5) is directly related to the support from the higher authorities. When the higher authorities create a feeling of security in the minds of the teachers, their efficiency would escalate.

The institutional factor of teacher effectiveness(equation 6) is influenced by the stress caused due toself, parents of students and the higher authorities. Confidence among the teachers, support from the higher authorities and an understanding among the parents of students would enable the teachers to be the most effective.

Interestingly, the students do not emerge in this model as causing stress to the teachers. It appears that the teachers, in general, know how to manage the students. Or, if a teacher fails in handling the students, the colleagues and higher authorities may come to his/her rescue in handling the adverse situations, as otherwise it would spoil the image of the teachers as a group and of the institution as well.

The self which is the innate personality of teacher significantly affects the teacher effectiveness. The stress which is caused due to teacher personality may be due to introvert or less conscientious or neurotic or less openness to experience or disagreeable nature of the teacher. The stress enduring capability of a teacher would relate to the effectiveness of a teacher (institutional).

The role of a colleague as a stressor has a significant relationship with regard to the effectiveness of a teacher (Intrapersonal, Teaching Methods, Inspiration and Affiliation). There is an inverse relationship between the colleagues as a stressor with teacher effectiveness. The peer pressure would be taken as a healthy competition by the teachers and would increase their effectiveness in terms of a usage of better teaching methodologies, or having a better relationship with the students. Hence there is an inverse relationship between the colleagues as a stressor as well as the effectiveness of teachers.

Stress due to family members or unable to balance both personal and professional life would impact the effectiveness of teachers. The imbalance of managing both the family members and teaching profession would give less flexibility and ability to manage time due to which the teacher may not explore new teaching methodologies and hence there is an impact on their effectiveness.

Pressure due to the parents would impact the teacher effectiveness. Parents with abnormal expectations want the teacher to provide extraordinary results like placements to all students, etc. would affect the teacher effectiveness.

Stress endured by the teacher due to higher authorities would definitely influence the effectiveness of teacher. Intense stress and pressure would definitely lead to the intrapersonal relationship of the teacher. It may lead to the decrease in the confidence level of the teacher, thereby the need to explore and exhibit new teaching methods reduces. It also would lead to the demotivation of the teachers with no rewards and intense pressure and hence the relationship between students, teachers and institution as a whole gets affected. Hence, there would be a negative influence on the efficiency of the teacher.

The above results and discussion reveal that the effectiveness of a teacher is mostly influenced by Self, colleagues, family members, parents and higher authorities. Thus, we have an opportunity to decrease the stress levels of a teacher by providing better environment in the institution, to educate and update them with the management of stress which are caused by their own self, colleagues, family members, parents and higher authorities of the institution.

The Model of managing stress that has been developed can be applied in higher educational institutions where in the right inputs for a teacher would reduce the stress, and thus increase the teacher effectiveness.

VI. Conclusion

Identification of stressors which causes stress is important in teaching profession. The present study has attempted to identify the factors that are associated with the construct of Teacher effectiveness in the higher education field. The stressors in relation to the teacher effectiveness are analysed. With the resulting output, a model has been evolved to facilitate improving the effectiveness of the teachers in their work situation with regard to the stressors which cause the stress to the teachers. It is shown that if the psychological demands of the teachers are met then there would be reduction of impact of stressors. And thus, there would be an increase in teacher effectiveness. In order to increase the effectiveness of teachers, it would be important to develop and educate them to manage stress efficiently. This would lead to the growth of the teacher on both personal and professional front. The study is considered to help the teachers and educational institutions to manage stress and enhance the effectiveness.

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