

**Job Satisfaction, Emotion Regulation,
Stress Relations, Aging and Biology Teachers' Effectiveness**

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Abstract:

This study aimed to investigate the relationship between emotion regulation, alleged global stress and job satisfaction by taking into account the changes due to aging. Survey method was used to collect data on measures of job satisfaction, emotion regulation, and stress. Data were analyzed by using simple linear regression. Findings show that emotion regulation is correlated with decreased stress and increased job satisfaction of biology teachers, and stress in life do not necessarily need to be work-related to decrease job satisfaction. Emotion regulation has high tendency in older biology teachers, and emotion regulation is related with job satisfaction only in older biology teachers, but not in younger biology teachers.

Key words: Job satisfaction, stress, emotion regulation, aging, simple linear regression

Background to the Study

The task of teachers at all level is highly demanding as they are at the centre of implementing the curriculum. The success or failure of any curricular implementation therefore will depend on teachers' level of educational attainment, preparation of instructions and presentation of lessons as well as methods/strategies adopted by the teacher. However, some factors such as teachers' job satisfaction, emotions, stress and aging could become inimical to the effectiveness of biology teachers. Biology teachers' can either feel content, accomplished or dissatisfied in their career. The extent to which they feel about their job can be measured through cognitive (evaluative), affective (or emotional) and behavioural components (Funham 2007). The degree of autonomy teachers' have at work place is perceived to highly influence job satisfaction (Edwin 2010). While job satisfaction is pivotal for high productivity of teachers, emotion

expression features centrally in all social interactions and work places. However, the social context at work may not totally permit the expression of all emotions, but rather requires the regulation of such experiences and this increases perceived stress (Gross & John 2008). Perceived stress in this context is the appraisal of the degree of biology teachers' job as being stressful (Lazarus 2010). Stress generally, can be looked at as a person-environment relationship. It is very important therefore for teachers to control their emotions while trying to cope with variety of stressful events. Hence, the need for teachers to belt up on their emotion regulation skills should be prioritized (John 2003).

This paper is aimed at investigating the relationship between emotion regulation, job satisfaction, stress relations and aging and how they impact biology teachers' effectiveness. Priority is given to two emotion regulation strategies which include Reappraisal and Suppression. Reappraisal is a process in which a person regulates his/her emotions before it is been expressed, while they are *re-examining or thinking* about the situation that arouses the emotion. In suppression on the other hand, the individuals regulate their emotions by preventing themselves from behaviorally *expressing* it (Lazarus 2011). In this study, we also explore the extent in which emotion regulation strategies are used, and since successful emotion regulation is associated with decreased stress, it should also be related with increased job satisfaction.

Theoretical Framework

This paper is supported with two theories thus:

- a. Edwin A. Locke's Range of Affect Theory (1976). The main premise of this theory is that satisfaction is determined by a discrepancy between what one wants in a job and what one has in a job. Further, the theory states that how much one values a given facet of work (e.g. the degree of autonomy in a position) moderates how satisfied/dissatisfied one becomes when expectations are not met. To illustrate, if Employee A values autonomy in the workplace and Employee B is indifferent about autonomy, then Employee A would be more satisfied in a position that offers a high degree of autonomy and less satisfied in a position with little or no autonomy compared to Employee B. This theory also states that too much of a particular facet will produce stronger feelings of dissatisfaction the more a worker values that facet.
- b. Frederick Herzberg's two-factor theory (1959) (also known as motivator-hygiene theory). This theory states that satisfaction and dissatisfaction are driven by different factors – motivation and hygiene factors, respectively. Motivating factors are those aspects of the job that make people want to perform, and provide people with satisfaction, for example achievement in work, recognition, promotion opportunities. These motivating factors are considered to be intrinsic to the job, or the work carried out. Hygiene factors include aspects of the working environment such as pay, company policies, supervisory practices, and other working conditions.

The significance of the above theories to this work are as summarized below:

- i. Teachers should be promoted as at when due to keep them afloat with their job.

- ii. Positions should be rotational to give a sense of autonomy to all teachers.
- iii. Healthy policies should be made and put into practice.
- iv. Teacher salary and allowances should be paid timely.
- v. Regular supervision aimed at improving teachers services should be carried out but not directed toward witch hunting any biology teacher.

Literature Review

Emotion Regulation, Stress Relations, Job Satisfaction in consideration of Aging and Teachers Effectiveness

Emotion-expressive behavior is at the focal point of any social interaction, including the interactions at work. The social context at work however, does not permit the expression of all emotions, but rather requires the regulation of such experiences and this increases perceived stress (Furnham, 2007). Perceived stress can be operationalized as a measure of how much stress an individual experience as a function of a combination of factors such as stressful events, the individuals' coping strategies, and personalities (Lazarus, 2010). Stress, in general can be understood as a person-environment relationship, and individuals wish to control their emotions while trying to cope with a variety of stressful events. Thus, a stressful environment requires emotion regulation skills (Gross & John, 2003). Recent literature indicates that reappraisal is a healthier emotion regulation strategy than suppression. It is reasonable to expect that as more and healthier emotion regulation strategies are used, individuals' perceived stress will decrease (Taylor & Seeman, 2010). Job satisfaction is defined as an emotional response or an attitude towards one's job and various facets of the jobs; it influences factors such as the individual's life satisfaction, overall performance of the organization, absenteeism, turnover and organizational citizenship. Herzberg's Dual Factor Theory (Herzberg, 1959) states that job satisfaction and dissatisfaction are influenced by different sets of factors. Job dissatisfaction occurs due the employees' perception of work environment such as wage, working conditions, interpersonal relations and company policies. The fulfillment of these hygienic factors (extrinsic factors) is a prerequisite for preventing job dissatisfaction. On the other hand, employees' satisfaction depends on motivators (intrinsic factors) such as recognition and advancement, as indicated in Locke's model.

The major difference between Locke's and Herzberg's approaches to the concept of job satisfaction is about the level dependency between the motivators and hygienic factors. In other words, while Herzberg states that these factors are mutually exclusive, Locke indicates that though they are two distinct categories, they are interdependent on each other. According to Locke's Value Theory, job satisfaction occurs if there is a fit between the importance of a certain facet of the job and the outcome of the job. Lawler, E. (1973) had a similar approach to the determinants of job satisfaction. Lawler's facet satisfaction model is about establishing links between certain facets of the job, and the perceptions of employees with regards these facets. This view is similar to McClelland's Need for Achievement Theory (1998). Both Locke and McClelland concluded that individuals try hard to achieve their goals in order to satisfy their emotions and objectives. These theoretical frameworks imply that job satisfaction is not only related to

job facets, it is also related to situational and contextual factors as well as individual characteristics such as self-esteem and the ability to cope with stress.

Lindstrom and Taylor (2000), state that a healthy organization is an organization where stress levels are low and commitment to organization and job satisfaction are high. In terms of the relevant literature, the relationship between job satisfaction and stress is widely studied. Numerous studies indicate that as stress increases, job satisfaction decreases. Thus, our second aim is to replicate this robust finding. Job insecurity, job control, and managerial styles are variables that function as mediators of the relationship between stress and job satisfaction. For example, job insecurity, the absence of a guarantee for the continuation of employment, is perceived to be worse than unemployment. Job control or autonomy refers to employees' control over their jobs in terms of freedom, independence and discretion in scheduling work, and higher levels of job control are associated with an increase in job satisfaction. Managerial style establishes an implicit link between the superiors and subordinates which may affect employees positively or negatively. Thus, it is important to consider the operation of multiple mediating variables along with emotion regulation, in the investigation of job satisfaction:

There is contradictory evidence in the literature with regards to the relationship between emotion regulation and job satisfaction. Whereas some studies indicate that emotion regulation can decrease job satisfaction (Locke 2007), others show that this relationship does not hold true for all emotion regulation strategies, and that emotion regulation can increase job satisfaction by means of amplifying positive emotions. To our knowledge, no other studies looked at the relationship between emotion regulation and job satisfaction relationship in a time perspective, that is, by considering how it changes as the individual gets older. The Socioemotional Selectivity Theory states that emotion regulation increases with increasing age. For example, older adults tend to put more emphasis on emotionally-satisfying relationships and tend to report more positive emotions compared to younger adults. Older adults also report greater control over their emotions than younger adults (Turk- Charles, S., Mather, M., &Carstensen, L. L. 2003). Moreover, for older adults, positive emotions endure longer than negative ones, and older adults use healthier emotion regulation strategies. Considering aging at the work place is especially important when we take into account that emotion regulation improves with increasing age and that stress and job satisfaction are related to emotion regulation.

Purpose of the Study

This study aims at reaching a better understanding of teachers' effectiveness, using emotion regulation, perceived global stress, job satisfaction and aging as predictors.

Statement of Hypotheses

The following hypotheses were tested to ascertain their effect on teachers' effectiveness.

Hypothesis 1. There is no significant relationship between job satisfaction and biology teachers' effectiveness

Hypothesis 2. Emotional regulation does not significantly relate to biology teachers' effectiveness

Hypothesis 3. There is no significant relationship between stress relation and biology teachers' effectiveness

Hypothesis 4. Age does not significantly relate to biology teachers' effectiveness

Methodology

Survey design was adopted for this study. Questionnaires on emotion regulation, perceived stress, job satisfaction and aging were distributed to biology teachers by the researchers at sixty (60) secondary schools in Calabar metropolis. Four (4) teachers were randomly selected from each school, making a total of two hundred and forty (240) biology teachers. However, one respondent fails to submit his questionnaire and hence analysis for this paper is done with two hundred and thirty nine (239) participants. No information was asked on the identity or contact information of the respondents however, background information such as age, gender, and number of years of education were covered in the socio-demographic questionnaire.

Instrumentation

The study made use of the following questionnaires:

Emotion Regulation Questionnaire (ERQ). This is a 10-item questionnaire developed by Gross and John (2000). The ERQ has two subscales, reappraisal, consisting of 5 items (e.g., "I control my emotions by changing the way I think about the situation I'm in"), and Suppression, consisting of 5 items (e.g., "I control my emotions by not expressing them"). Both subscales were 5-point Likert, ranging from "Strongly agree" to "Strongly disagree". The Items were validated by research experts in the University of Calabar, Calabar.

Perceived Stress Scale (PSS). This instrument is composed of 10 items to measure global stress, that is, to what degree individuals appraise their lives as stressful. The scale involves items such as "In the last month, how often you dealt successfully with irritating life hassles" and the 5-point Likert scale ranges from "never" to "very often". The Items were validated by research experts in the University of Calabar, Calabar.

Job Satisfaction Questionnaire: This instrument is comprises of 10 items which are related to intrinsic factors such as doing things for other people, feeling of accomplishment and extrinsic factors such as opportunity for advancement, competence of supervisor, work conditions and coworkers. The questionnaire uses a 5-point Likert scale ranging from "very dissatisfied." to "very satisfied". A pilot

study on 50 biology teachers showed a Cronbach alpha value of 0.87 on the reliability test for the short version of this questionnaire.

Research Findings

The result of the analysis is presented in the table 1,2, 3&4. The hypotheses were tested at 0.05 level of significance.

Ho 1: There is no significant relationship between job satisfaction and biology teachers' effectiveness. The independent variable in this hypothesis is job satisfaction while dependent valuable is biology teachers' effectiveness. Linear regression statistical tool was used to test this hypothesis. The result of the analysis is presented in Table 1.

Table 1. Analysis of simple linear regression of the relationship between job satisfaction and biology teachers' effectiveness

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	13196.090	1	13196.090	145.047	.000
Residual	21561.834	237	90.978		
Total	34757.925	238			

$R = .295$; $R^2 = .087$

The result of simple regression analysis in Table 1 showed the correlation coefficient of the variable of .295 which implied that there is a strong relationship between job satisfaction and biology teachers' effectiveness. More so, the result also showed that $Adj R^2 = .087$ which implies that 8.7 % of job satisfaction accounted for biology teachers' effectiveness. This means that the more job satisfaction we have, the more the biology teachers' effectiveness. A cursory look at the table also showed an analysis of variance result of ($F=145.047$, $p<.000$). This implies that even though the percentage contribution of job satisfaction is small, the result also showed that there is a significant influence of job satisfaction on biology teachers' effectiveness. Hence the null hypothesis is rejected at .05 level of significance.

Ho 2: There is no significant relationship between emotional regulation and biology teachers' effectiveness. The independent variable in this hypothesis is emotional regulation while dependent valuable is biology teachers' effectiveness. Linear regression statistical tool was used to test this hypothesis. The result of the analysis is presented in Table 2.

Table 2. Analysis of simple linear regression of the relationship between emotion regulation and biology teachers' effectiveness.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	14687.247	1	14687.247	173.431	.000
Residual	20070.677	237	84.686		
Total	34757.925	238			

R=.650; R² = .423

The result of simple regression analysis in Table 2 showed the correlation coefficient of the variable of .650 which implied that there is a strong relationship between emotion regulation and biology teachers' effectiveness. More so, the result also showed that Adj R² = .423 which implies that 42.3 % of emotional regulation accounted for biology teachers' effectiveness. This mean that the less job emotional regulation we have, the more the biology teachers' effectiveness. A cursory look at the table also showed an analysis of variance result of (F=173.431, p<.000). This implies that even though the percentage contribution of emotional regulation is small, the result also showed that there is a significant influence of emotional regulation on biology teachers' effectiveness. Hence the null hypothesis is rejected at .05 level of significance.

Ho 3: There is no significant relationship between stress relation and biology teachers' effectiveness. The independent variable in this hypothesis is stress relation while dependent valuable is biology teachers' effectiveness. Linear regression statistical tool was used to test this hypothesis. The result of the analysis is presented in Table 3.

Table 3. Analysis of simple linear regression of the relationship between stress relation and biology teachers' effectiveness.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	6847.292	1	6847.292	58.143	.000
Residual	27910.633	237	117.766		
Total	34757.925	238			

R=.444; R² = .197

The result of simple regression analysis in Table 3 showed the correlation coefficient of the variable of .444 which implied that there is a strong relationship between stress relation and biology teachers' effectiveness. More so, the result also

showed that $\text{Adj } R^2 = .197$ which implies that 19.7 % of stress relation accounted for biology teachers' effectiveness. This means that the less stress relation we have, the more biology teachers' effectiveness. A cursory look at the table also showed an analysis of variance result of ($F=58.143, p<.000$). This implies that even though the percentage contribution of stress relation is small, the result also showed that there is a significant influence of stress relation on biology teachers' effectiveness. Hence the null hypothesis is rejected at .05 level of significance.

Ho 4: There is no significant relationship between age and biology teachers' effectiveness. The independent variable in this hypothesis is age while dependent variable is biology teachers' effectiveness. Linear regression statistical tool was used to test this hypothesis. The result of the analysis is presented in Table 4.

Table 4. Analysis of simple linear regression of relationship between age and biology teachers' effectiveness.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	10615.438	1	10615.438	104.209	.000
Residual	24142.486	237	101.867		
Total	34757.925	238			

$R=.553; R^2 = .305$

The result of simple regression analysis in Table 4 showed the correlation coefficient of the variable of .563 which implied that there is a strong relationship between age and biology teachers' effectiveness. More so, the result also showed that $\text{Adj } R^2 = .305$ which implies that 30.5 % of teacher age accounted for biology teachers' effectiveness. This means that the older the teacher, the more biology teachers' effectiveness. A cursory look at the table also showed an analysis of variance result of ($F=104.209, p<.000$). This implies that even though the percentage contribution of teachers age is small, the result also showed that age significantly influence biology teachers' effectiveness. Hence the null hypothesis is rejected at .05 level of significance.

Discussion

Our study explored the relationship between job satisfaction, emotion regulation and stress, by taking into account the age of the participants. First of all, our findings were in line with the robust finding that increased stress is associated with decreased job satisfaction (Locke 2007). There is extensive number of studies examining the relationship between job satisfaction and work stressors (Day, A. L., & Livingstone, H.A. 2003). Our study focused on global stress and showed that stressors in life do not need to be work-related to decrease job satisfaction.

A contribution of this study is to consider emotion regulation not as a single construct, but by separating it into two rather common emotion regulation strategies,

namely, reappraisal and suppression. Reappraisal involves changing the way individuals think about emotional events, while suppression involves controlling the expression of emotions related to those events, and reappraisal is a healthier emotion regulation strategy than suppression (Grandey, A. A. 2003). Consistent with these findings, our findings show that it is the use of reappraisal, rather than suppression, that is associated with decreased stress. While emotion regulation can aid in the regulation of both positive and negative emotions, our findings point out that it is the regulation of negative emotions rather than positive ones that is related to decreased stress. Our results also showed that emotion regulation is associated with increased job satisfaction. This relationship is likely a bidirectional one, as our analyses indicate. Note that both reappraisal and suppression are related to job satisfaction. While reappraisal, that is, changing the way one thinks about emotional events, can aid job satisfaction by providing every day well-being, suppression, that is, practicing not showing emotions, may lead to better interpersonal relationships at the workplace and increase job satisfaction. Moreover, other studies also suggest that positive emotions predict job satisfaction (Grandey, A. A. 2003), thus, if emotion regulation is successful, job satisfaction should increase. With regards to how job satisfaction might influence emotion regulation, since job satisfaction is related to a positive job relevant emotional response, increased job satisfaction may possibly lead to greater use of emotion regulation since work condition can affect mood and emotions, and the work environment requires down-regulation of emotions as well in order to maintain job-appropriate behavior. When factors such as having a supportive leader or having control over the job are perceived positively, this might decrease the need to use emotion regulation since the emotional response, that is part of job satisfaction is already positive.

To our knowledge, no other studies examined the relationship between job satisfaction, emotion regulation, and stress by taking into account the age of the participants. Findings show that aging is associated with better and healthier regulation of emotion, a tendency to direct attention towards positive and away from negative emotional information (Day, A. L., & Livingstone, H.A. 2003), keeping a greater proportion of positive emotional information in mind compared to negative, and increased frequency and duration of positive emotions. Thus, when emotional responses such as job satisfaction are investigated, it is important to take into account the age of the participants. Previous studies consider participants between the ages 18-30 as younger adults and show that decreased negative effect, most probably due to increased emotion regulation starts around the Middle Ages. Thus, in our analyses related to aging, we separated our participants into three age groups, Group1 (ages 21-30), Group 2 (ages 31-49), and Group 3 (ages 50 and over). Our results indicated that emotion regulation is higher in the last group, as predicted. Moreover, while emotion regulation was negatively related to stress and positively related to job satisfaction in Group 2 and Group 3, this relationship was not statistically significant in the youngest group. Although stress did not vary as a function of age, job satisfaction was higher in older participants. This finding indicates that emotion regulation is likely an ability that is acquired with

increasing age, and the ability to apply it to the work setting takes time, especially since stressors in everyday life remain.

Cote and Morgan (2002) tested college students who worked part time as their participants and found that down-regulation of negative emotions is actually related to decreased job satisfaction. Although we did not find a negative relationship between emotion regulation and job satisfaction in youngest adults, we found no relationship. Our youngest group was beyond the age of college students (ages 21-30), and this may account for the discrepant results since emotion regulation is associated with increased job satisfaction as the individual ages. Emotion regulation has emerged as an important factor in the study of job satisfaction in the recent years. This study contributes to the literature by considering different emotion regulation strategies, as well as by taking into account how emotion regulation changes with age. Findings confirm that every day, emotion regulation is important in increasing job satisfaction, and that this relationship is especially evident as the individual gets older.

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