

## The Effect of Stress on the Performance of High School Physics Teachers

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**Abstract:** This study aims to see the effect of work stress on the performance of private high school physics teachers. The research method in this study used a survey by distributing questionnaires to each teacher with a quantitative approach because the research questionnaire was in the form of a Likert scale. The entire population is the sample in this study. Simple linear regression data analysis technique using Microsoft Office Excel software which is done manually using the available formulas. Based on the results of the study, it was found that  $F_{count} = 4.160$  and  $F_{table} = 4.07$ , because  $F_{count} > F_{table}$ , it can be concluded that there is an effect of work stress on the performance of private high school physics teachers.

**Key words:** Work Stress • Physics Teacher Performance

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### INTRODUCTION

The teacher's role is very important in the teaching and learning process, so that the quality of education in a school is largely determined by the ability of a teacher in carrying out his duties. Teachers are a determining factor for the success of education in schools, because teachers are the center and source of teaching and learning activities. Furthermore, it is stated that the teacher is an influential component in improving the quality of education in schools. This shows that the performance of a teacher greatly determines the quality of education. Teacher performance is a determining tool in achieving school goals, so efforts need to be made to improve its performance. However, this is not easy to do, because many factors affect the level of teacher performance. The low performance of teachers, among others, is caused by work motivation, does not have a high work ethic and is not productive, among others, can be seen from the following: (1) weak mastery of the material being taught; (2) the discrepancy between the field of study that the teacher learns and what is in fact in the field being taught; (3) less effective teaching methods; (4) the teacher's lack of authority in front of students; (4) weak motivation and dedication to become a true educator; more and more happen to be teachers and not really teachers; (6) lack of emotional maturity, independent thinking and firmness of attitude in quite a

number of teachers so that from their personality they are actually not ready as educators; most teachers in their relationship with students still only function as teachers and not as educators; (7) the relatively low intellectual level of prospective teacher students who enter the Education Personnel Procurement Institute compared to those who enter the University. The demands of life are so great on the one hand, while on the other hand the responsibility and moral burden that is borne as a teacher and educator is very large, often resulting in work stress/mental pressure as a result of working on teacher. Not to mention if the teacher becomes the target of criticism for the failure of an educational process experienced by his students. Not infrequently teachers end up taking an apathetic attitude towards their profession in the midst of the dilemma of responsibilities and socio-economic demands. Job stress, by experts on organizational behavior, has been stated as the causative agent of various physical, mental and even organizational output problems. Job stress does not only affect the individual, but also the organizational and industrial costs. Many studies link work stress with various things, for example work stress is associated with job satisfaction, mental health, tension, absenteeism and is often also associated with performance. For example, high levels of job stress are perceived to be negatively related to job satisfaction. High levels of job stress are also perceived to be negatively related to mental health [1, 2, 3].

**Definition of Work Stress:** There are several reasons why organizational stress issues need to be brought to the fore at this point. Among them are: (1) The problem of stress is a problem that has been hotly discussed recently and its position is very important in relation to employee productivity; (2) Besides being influenced by factors originating from outside the organization, stress is also heavily influenced by factors originating from within the organization. Therefore, it is necessary to realize and understand its existence; (3) An understanding of the sources of stress, along with an understanding of ways to overcome them, is very important for employees and anyone involved in the organization for the continuity of a healthy and effective organization; (4) Many of us who almost certainly are part of one or more organizations, both as superiors and as subordinates, have experienced stress even to a very low degree; (5) In this era of progress in all fields, people are increasingly busy. There the work equipment is more modern and efficient and on the other hand the workload in organizational units is also increasing. This situation will, of course, demand greater employee energy than the previous one. As a result, experiences called stress in a fairly high level become more pronounced. Problems about job stress are basically often associated with the notion of stress that occurs in the work environment, namely in the process of interaction between an employee and aspects of his work. In discussing work stress, it is necessary to first understand the meaning of stress in general. Stress is a condition where a person experiences tension due to conditions that affect him, these conditions can be obtained from within or from outside a person. However, it should be noted that a condition that makes employees work stress will not necessarily make other employees work stress. Conflict that occurs in an employee may cause work stress for an employee, but is a challenge for other employees. Based on these examples, it can be seen that the same conditions are not necessarily accepted equally by each individual depending on individual circumstances, the environment and other factors [4, 5]. Defines stress as a response in adjusting which is influenced by individual differences and psychological processes, as a consequence of environmental actions, situations or events that hold too much psychological and physical demands on a person. Thus it can be concluded that work stress arises because of environmental demands and the response of each individual in dealing with it can be different [6, 7, 8]. Defines stress as a dynamic condition in which an

individual is confronted with an opportunity, constraint or demand associated with what he or she desires most and the result is perceived as uncertain and important [9]. Stress into two types, namely negative stress which is commonly called distress and often results in dysfunctional employee behavior such as frequent mistakes, low morale, being ignorant and absent without explanation. On the other hand, positive stress or commonly called eustress creates challenges and feelings to always excel and acts as a critical motivating factor that will improve employee performance. Thus in general it can be concluded that stress is a stimulus in the form of pressure that will affect the physical and psychological conditions of the individual where the pressure/stimulus can come from outside the individual. Stress can be defined as a stimulus that is seen as a force or stimulus that suppresses the individual causing a response (response) to tension. In this definition, there is a lack of clarity about the possible level of effects caused by the same stress on different individuals. While the definition of response views stress as a physiological and psychological response of a person to environmental pressures, where most of the stress comes from the environment outside the individual. Stress as a work definition suggests stress as a response in adjusting to being influenced by individual differences and or psychological processes, which is a consequence of any external action (environment), situations or events that hold too many psychological and or physical demands on someone. From the above understanding, it can be concluded that the notion of work stress is a condition that arises due to the interaction between individuals and work which is characterized by changes in individuals that encourage individuals to deviate (not functioning normally) [10, 11, 12].

Nowadays stress is an attribute of modern life. This problem hasn't professional, territorial and cultural boundaries. Stress is a protective reaction that helps the organism to survive in difficult conditions and environments and it is the positive, constructive role of stress that very few have studied [13]. By virtue of psychology stress means 'too much expectations' or 'organism adaptation'. We need some stress to be aware. Hans Selieh who is stress specialist considers such stress rate curative, but if it is long and intense, it can paralyze one's adjustment ability and dispirit persons. Nowadays stress is considered as an important factor of the diseases. Mental and cardiac diseases cancer, accident and educational frustration have significant relation with

stress [14]. The role of education is undeniably crucial in the development of human capital and consequently the entire society. Where, the importance of teacher is widely accepted in making the future of human-being. Teachers are those selected people who having the candle of enlightenment, knowledge and the key to success. The success a nation is depends upon the success of education system, while the success of education system depends upon the quality of teachers, where, the quality of teachers based on the quality of teacher. Teachers are the strong pillars not only of the society but of the nation. The success and progress of any nation is depends upon its sincere and good teachers. The importance of teachers is evident in the development of any progressive society for many reasons. Therefore, teacher importance in the life of a nation cannot be ignored. Teachers seem to be the foundation of the entire educational process. The success of any education system is established only on the quality of teachers [15]. Teachers assume a heavy responsibility and their practical roles extend beyond the definition of teaching. Teachers are expected to assist students in their cognitive and affective development and to educate students in the socialization process so that the students would be able to be successful in life and function effectively in society. Marzano and Marzano stated that students learning process in the classroom is directly correlated with teachers' classroom management ability and teachers' actions in the classroom have a double effect on students achievements as compared to curriculum policy. Similarly, recent research has shown that effective classroom strategies that encourage effective environment can affect students ability to achieve academically. In becoming an effective teacher, it is more difficult and complicated as compared to what many people have thought [16]. The performance of the high school students is generally described as low as appearing from the analysis of the high school students' tests as reported by several English language teachers. One possible reason behind learner's weakness in comprehension can be the lack of strategies or techniques. Another facet of the problem is the lack of sufficient knowledge and training on the part of some EFL teachers [17].

## **MATERIALS AND METHODS**

**Research Stages:** This research was carried out with the following stages:

### **Preparation Stage, Including:**

- Make observations
- Determine research schedule
- Compile a questionnaire

### **Research Implementation Phase, Including:**

- Sampling from the population
- Provide research questionnaire
- Analyze the results of the questionnaire
- Testing hypotheses
- Summing up the hypothesis

**Research Sites:** This research was conducted in a private high school in TanjungMorawa sub-district.

**Research Variables:** This study examined the magnitude of the effect of work stress as an independent variable, namely the variable that is considered the influencing factors and the teacher's performance as the dependent variable.

**Research Design:** This research was conducted using a field research method by means of a survey. Meanwhile, the approach used is a quantitative approach.

**Data Collection Techniques:** To collect research data on the work stress variable and teacher performance, a questionnaire was used. Questionnaires are given to respondents through a number of questions that have been prepared according to the research instrument. The questionnaires were distributed based on a Likert scale.

**Data Analysis Techniques:** The method used in this research is a survey method. This study uses a correlational technique because this study seeks to investigate the relationship between several research variables, namely the work stress variable and the teacher's attitude towards work motivation as an independent variable with teacher performance as the dependent variable. The relationship between these variables using correlation and regression analysis. To answer the three hypotheses that have been formulated, data analysis was carried out in the form of descriptive analysis, simple regression statistical tests and simple correlations and multiple regression and multiple correlation statistical tests. The data analysis

technique uses the help of Microsoft Office Excel software which is carried out manually using the formulations contained in the references used and automatically using the data analysis formulation facilities available in the software in question.

## RESULTS

From the implementation of research that has been carried out based on the location referred to in this study and all incoming data meets the requirements to be processed and analyzed, it produces data consisting of work stress data and teacher performance which can be seen in Table 1 below:

In this study, the independent variables consist of work stress as X and teacher performance as Y. So that Table 1 above can be adjusted as in Data analysis techniques using Microsoft Office Excel software are carried out manually using the formulations contained in the references used and automatically using the data analysis formulation facilities available in the software in question.

Table 1: Research Result Data on Each Predictor

| Work Stress (X) | Teacher Performance (Y) |
|-----------------|-------------------------|
| 72              | 47                      |
| 71              | 52                      |
| 72              | 52                      |
| 59              | 39                      |
| 72              | 52                      |
| 56              | 39                      |
| 70              | 48                      |
| 72              | 46                      |
| 69              | 50                      |
| 67              | 39                      |
| 69              | 52                      |
| 72              | 52                      |

Table 2 below:

| X   | Y   | X <sup>2</sup> | Y <sup>2</sup> | XY    |
|-----|-----|----------------|----------------|-------|
| 72  | 47  | 5184           | 2209           | 3384  |
| 71  | 52  | 5041           | 2704           | 3692  |
| 72  | 52  | 5184           | 2704           | 3744  |
| 59  | 39  | 3481           | 1521           | 2301  |
| 72  | 52  | 5184           | 2704           | 3744  |
| 56  | 39  | 3136           | 1521           | 2184  |
| 70  | 48  | 4900           | 2304           | 3360  |
| 72  | 46  | 5184           | 2116           | 3312  |
| 69  | 50  | 4761           | 2500           | 3450  |
| 67  | 39  | 4489           | 1521           | 2613  |
| 69  | 52  | 4761           | 2704           | 3588  |
| 72  | 52  | 5184           | 2704           | 3744  |
| 821 | 568 | 56489          | 27212          | 39116 |

## Partial Correlation Between Work Stress (X) on Teacher Performance (Y)

- To calculate the partial correlation value between Work Stress (X) on Teacher.

Performance (Y) using the product moment correlation formula:

$$r_{X1.Y} = \frac{n(\sum X_3 Y) - (\sum X_3)(\sum Y)}{\sqrt{\{n(\sum X_3^2) - (\sum X_3)^2\} \{n(\sum Y^2) - (\sum Y)^2\}}}$$

$$= \frac{12(39116) - (821)(568)}{\sqrt{\{12(56489) - (632)^2\} 821\{12(27212) - (568)^2\}}}$$

$$r_{X1.Y} = 0,791$$

Based on the calculation results above, the contribution of Work Stress (X) to Teacher Performance (Y) is:

$$KP = (R_{X1.Y})^2 \times 100\%$$

$$KP = (0,791)^2 \times 100\%$$

$$KP = 79,1\%$$

- Proving whether there is an effect between Work Stress (X3) on Teacher Performance (Y) to prove it is used the formula:

$$F_{hitung} = \frac{(R_{X1.X2.X3.Y})^2 (n - m - 1)}{m[1 - R_{X1.X2.X3.Y}^2]}$$

$$F_{hitung} = \frac{(0,791)^2 (12 - 3 - 1)}{3[1 - (0,791)^2]}$$

$$F_{hitung} = 4,459$$

- Determine the table F value

To find out the price of F table can be done by:

$$F_{tabel} = F_{(\alpha)(dkpembilang = m), (dkpenyebut = n-m-1)}$$

$$m = 3$$

$$n = 12$$

$$\alpha = 0,05$$

$$dk = 12 - 3 - 1 = 8$$

Referring to the F distribution table, the F table value is obtained in accordance with a significant level of 0.05 in the degrees of freedom of the numerator 3 and the degrees of freedom of the denominator 8:

$$F_{\text{tabel}} = F_{(0,05)(3,8)} = 4,07$$

- Testing Rules

$F_{\text{hitung}} \leq F_{\text{tabel}}$  then there is no effect

$F_{\text{hitung}} \geq F_{\text{tabel}}$  then there is influence

- Compare  $F_{\text{hitung}}$  with  $F_{\text{tabel}}$

It turns out  $F_{\text{hitung}} = 4,459 > F_{\text{tabel}} = 4,07$

- Making Decisions

There is a significant effect between work stress (X) on teacher performance (Y). From the stages as described above, it can be stated that teacher performance is influenced by related factors, namely work stress. Partially, it is proved that  $F_{\text{hitung}} > F_{\text{tabel}}$  yaitu  $F_{\text{hitung}} = 4,459$  and  $F_{\text{tabel}} = 4,07$ .

## DISCUSSION AND CONCLUSION

Based on the results of research with the existence of work stress affect the performance of a teacher. Work stress is a condition that arises from the interaction between humans and work and is characterized by changes in humans that force them to deviate from their normal functions. Too much stress can threaten a person's ability to deal with the environment. As a result, employees develop various stress symptoms that can interfere with their work performance. The higher the level of employee work stress, the lower the employee's performance at work. The findings of this study indicate that the work stress variable has a significant effect on employee performance. Job stress is helpful but can play a role in wrong or impair performance. Unresolved stress definitely affects performance.

Thus, generally, this study concurs with previous research. Travers & Coopersurveyed 800 teachers in England and France about stress and found substantially different responses. 22% of sick leave in England, as opposed to 1% in France was attributed to stress. 55% of the English teachers as opposed to 20% of the French sample reported recently considering leaving teaching. Interestingly, there was substantial agreement between the English and French teachers as to the sources of pressure, both groups citing classroom discipline, low social status and lack of parental support. However, English teachers reported more problems emanating from long hours of work, overwork and political interference.

The original idea of the present study was to study stress in teaching and the effects that it has on the performance of the teachers. However, its profound relationship with the more generalized concept of occupational stress highlights the need to examine the incidence and characteristics of stress and burnout in the teaching 13 profession in a combined way. Stress and burnout in the context of teaching (though by no means limited to this profession) are pathological syndromes suffered by teachers. They are caused largely by the conditions (organizational and of many other types) in which teaching takes place. A summary analysis of the current situation in education permits the identification of some of the social and organizational factors that constitute sources of stress and burnout: The combination of changes in society and the educational system itself has led to a growing complexity of the teacher's role and has increased the demands of the school environment [18].

At some level stress is necessary. If there is no stress at work, teachers will not feel challenged with the result that performance will be low. On the other hand, with stress, the teacher feels the need to exert all his abilities to achieve high and thus be able to complete the task well. For a leader the pressures given to a teacher must be related to whether the stress caused by these pressures is still in a normal state.

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