CHAPTER – I

INTRODUCTION AND RESEARCH DESIGN

1.1. STRESS A FOREWORD

In the days when prehistoric man had not yet attained self-consciousness, he reacted to any signs of danger in two ways: he fought or he fled. This is the 'fight-or-flight' response a term coined by W.B. Cannon in 1914. The body reacts with alarm to the threat: there is a rapid increase in metabolism, with hormonal, physiological and biochemical changes taking place instantly.

The body muscles become tense and the hypothalamus activates the pituitary gland, which secretes hormones that then activate other hormone-producing centers like the adrenal glands. The release of adrenaline and other hormones sustains the alarm reaction and physiological changes occur in response to the stress stimulus. The body now needs glucose for the muscles to function properly. The liver responds by releasing some into the bloodstream. For the glucose to be transformed into energy, extra oxygen is required. The heart begins pumping blood faster to carry this extra supply, leading to a rise in blood pressure.

The amount of blood available in the body is, however, limited. In order to deliver extra blood to select areas—the muscles, heart, lungs,
kidneys and the brain—there is a temporary cutoff in blood supply to non-priority areas. Consequently, the digestive system slows or stops altogether, the salivary glands stop secreting, blood vessels in the kidneys and the abdomen constrict and the immune system slows down.

These physiological effects are categorized as 'arousal'. Concomitant emotional manifestations like fear, apprehension and worry are termed 'anxiety'.

Once the threat diminished, the body's reactions quickly returned to normal. All of which was fine in the good old days of yore.

To a scientist, stress is any action or situation that places special physical or psychological demands upon a person, anything that can unbalance his individual equilibrium. And while the physiological response to such demand is surprisingly uniform, the forms of stress are innumerable. Stress may be present even in unconscious form like the noise of a city or the daily chore of driving the car. Perhaps the one incontestable statement that can be made about stress is that it belongs to everyone. Nothing can isolate stress from human beings as is evident from various researches and studies. Stress can be managed but not simply done away with. Today, widely accepted ideas about stress are challenged by new research, and
conclusions once firmly established may be turned completely around. Some stress is necessary to the well being and a lack can be harmful. Stress definitely causes some serious ailments. Severe stress makes people accident-prone.

### 1.2. DEFINING STRESS

Defining stress is a very complex matter, which is the subject of different analyses and continuous debate among experts. Beyond the details of this debate, a general consensus can be reached about the definition of stress, which is centered on the idea of a perceived imbalance in the interface between an individual, the environment and other individuals. When people are faced with demands from others or demands from the physical or psychosocial environment to which they feel unable to adequately respond, a reaction is activated to cope with the situation. The nature of this response depends upon a combination of different elements, including the extent of the demand, the personal characteristics and coping resources of the person, the constraints on the person in trying to cope and the support received from others.
TABLE NO.1.1
STRESSOR-STRESS RELATIONSHIPS

<table>
<thead>
<tr>
<th>STRESSOR</th>
<th>STRESS</th>
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<tbody>
<tr>
<td>An External Demand or Event</td>
<td>A response to the External Event</td>
</tr>
<tr>
<td>Extreme temperature</td>
<td>Increased blood pressure</td>
</tr>
<tr>
<td>Extreme lighting</td>
<td>Elevated heart beat</td>
</tr>
<tr>
<td>Lack of sleep</td>
<td>Dilated pupils</td>
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</tbody>
</table>

Source: NIOSH manual

The Health and Safety Executive defines stress as:

"The reaction people have to excessive pressures or other types of demand placed upon them. It arises when they worry they can't cope."

The term stress means different things to different people. Davis (1981) defines stress as “A condition of strain on one’s emotions, thought processes and physical conditions”. Di Martino (2003) summarized the concept of stress as “the physical and emotional response that occurs when the requirements of the job do not match the capabilities, resources needs of the employee”. Simply put, stress is our reaction to situations that pose demands, constrains or opportunities. Stress is not in itself completely negative. However, people react to situations differently depending on their life experiences. Under normal circumstances the reaction mechanism of employees should enable them to find new balances and responses to new
situations. Stress is, therefore, not necessarily a negative phenomenon. People with broad experience right from childhood encountering new situations can adjust better than those without.

1.3. THEORETIC/LITERARY REFLECTIONS ON STRESS

Scientists use the term homeostasis to describe the physiological limits in which the body functions efficiently and comfortably. Stress of any sort disturbs homeostasis by creating a state of disequilibrium, which significantly affects performance of workers in organisations. The potential consequences of stress on job performance and productivity are remarkable and take its toll on organisational budgets. In recognition of this fact Flippo (1984) pointed out that in recent times, considerable amount of attention has been given to the impact of stress on the human body. Though stress can be functional and dysfunctional; the consequent effect of stress on Peoples' performance has made it exigent for them to optimally achieve their goals without adopting some palliative intervention stress management strategies. As a silent killer, stress is normal and a necessary evil, but if stress is intense, continuous or repeated and if the person is unable to cope or if support is lacking, then stress becomes a negative phenomenon leading to physical illness and psychological disorders (Di Martino, 2003). Supporting this contention, George and Jones 1996), noted that excessive high level of stress may retard managers' performance as well as lead to absenteeism and turnover. On the
other hand, moderate stress which may be referred to as anxiety, may also be useful in assisting people in life adjustments and make the avoidance of dangerous situation achievable. Excessive stress is detrimental to the functionality of the workplace and any action taken against such a problem is an integral part of the organizational development of a sound enterprise.

According to Karasek Model cited in Di Martino (2003) Stress is intensified by three variables namely:

i. **Demands (Psychological Demands):** The pressures put on the individual by the work environment including workload, pace of work, length of working hours, time schedules, tight deadlines, etc;

ii. **Control (Decision Latitude):** The individual’s capacity to respond to work demands and pressures, including autonomy, responsibility, skill, training, experience, etc; and

iii. **Support (Social Support):** The characteristics of the social environment in which working activities are performed including organizational culture, working climate, Management style, help from co- workers, involvement, participation, teamwork, etc.
By combining control and demand, four situations can be identified; they are as specified below:

i. **Passive Low Control/Low Demand:** This is a situation where the employee has little control but where demands are also low. This leads to stress in the form of monotony and boredom;

ii. **High Strain Low Control/High Demand:** This is a situation where the employee has little control but demands are high. This leads to high stress.

iii. **Low Strain High Control/Low Demand:** This relates to relaxed or low strain situations where the employee has a lot of control and demands are low. This leads to little stress: and

iv. **Active High Control/High Demand:** This is a situation where the employee has to respond to high demands, but at the same time can exercise high control. This leads to an active situation where most people feel they can somehow manage stress.

These are not static situations. Accordingly:

- Stress increases when control declines in combination with rising psychological demands or stressors;
- Stress decreases when control increases in combination with falling psychological demands or stressors; and
➢ Social support operates as a “facilitator” in reducing stress at work. Stress will decrease when social support increases.

From the above, stress could be precipitated by several variables and consequences of stress need to be properly managed to avoid economic cost for organisations and the well-being of the employees.

1.4. CONCEPT OF STRESS

Stress is a complex phenomenon. It is a very subjective experience, what may be a challenge for one will be a stressor for another. It depends largely on background experiences, temperament and environmental conditions. Stress is a part of life and is generated by constantly changing situations that a person must face. The term stress refers to an internal state, which results from frustrating or unsatisfying conditions. A certain level of stress is unavoidable, because of its complex nature stress has been studied for many years by researchers in psychology, sociology and medicine.

The modern concept of stress was pioneered by Selye and Cannon, who characterized stress in physiological terms. Since then, different definitions and conceptualizations of stress in the biological, medical and psychological literature have led to continuing confusion in the study of stress. Also, the fact that the term stress has increasingly become a psychological
concept as well as entering into general use has had an effect on this tendency.

Stress is the term often used to describe distress, fatigue and feelings of not being able to cope. The term stress has been derived from the Latin word 'stringer' which means to draw tight. The term was used to refer the hardship, strain, adversity or affection. Stress is an integral part of natural fabric of life. It refers both to the circumstances that place physical or psychological demands on an individual and to the emotional reactions experienced in these situations (Hazards, 1994). Although, the adverse effects of stress on physical health and emotional well being are increasingly recognised, there is little agreement among experts on the definition of stress:

- According to Selye (1976), stress is caused by physiological, psychological and environmental demands. When confronted with stressors, the body creates extra energy and stress occurs because our bodies do not use up all of the extra energy that has been created. Selye first described this reaction in 1936 and coined it the General Adoption Syndrome (GAS). The GAS includes three distinct stages: a) alarm reaction, b) stage of resistance c) stage of exhaustion According to Lazarus, (1976): stress occurs when there are demands on the person, which taxes or exceeds his adjustable resources. According, to Spielberg, (1979) the term stress is used to refer to a complex psycho- biological process that consists of three major elements.
This process is initiated by a situation or stimulus that is potentially harmful or dangerous stressor. If a stressor is interpreted as dangerous or threatening, an anxiety reaction will be elicited.

According to Steinberg and Ritzmann, (1990): Stress can be defined as “an under load or overload of matter, energy or information input to, or output from, a living system.” According to Levine and Ursin, (1991), “Stress is a part of an adaptive biological system, where a state is created when a central processor registers an informational discrepancy.” According to Humphrey, (1992): In essence, stress can be considered as “any factor, acting internally or externally, that makes it difficult to adapt and that induces increased effort on the part of the person to maintain a state of equilibrium both internally and with the external environment.” According to Levi, (1996): “Stress is caused by a multitude of demands (Stressors) such an inadequate fit between what we need and what we are capable of, and what our environment offers and what it demands of us.” According to, Bernik (1997): “Stress designates the aggression itself leading to discomfort, or the consequences of it. It is our response to a challenge, be it right or wrong.” According to Bowman,(1998): “Stress is the body’s automatic response to any physical or mental demand placed upon it. When pressures are threatening, the body rushes to supply protection by turning on ‘the juices’ and preparing to defend itself. It’s the ‘flight or fight’ response in action.”
1.5. OCCUPATIONAL STRESS

Occupational stress can be defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. Job stress can lead to poor health and even injury. The concept of Occupational stress is often confused with challenge, but these concepts are not the same. Challenge energizes us psychologically and physically, and it motivates us to learn new skills and master our Occupations. When a challenge is met, we feel relaxed and satisfied (U.S NIOSH, 1999).

Thus, challenge is an important ingredient for healthy and productive work. The importance of challenge in our work lives is probably what people are referring to when they say, "a little bit of stress is good for you. Occupational stress is that which derives specifically from conditions in the workplace. These may either cause stress initially or aggravate the stress already present from other sources. In today's typical workplace, stress is seen as becoming increasingly more common. People appear to be working longer hours, taking on higher level of responsibilities and exerting themselves even more strenuously to meet rising expectations about Occupational performance. Competition is sharp. There is always someone else ready to “step into one’s shoes” should one be found wanting.
1.5.1. DEFINING OCCUPATIONAL STRESS

Kyriacou (1987), defines “teacher stress as the experience by a teacher of unpleasant emotions such as tension, frustration, anger and depression resulting from aspects of his work as a teacher.”

Okebukola and jedgede (1989), defined occupational stress as “a condition of mental and physical exertion brought about as a result of harassing events or dissatisfying elements or general features of the working environment.”

Borg (1990), conceptualizes teacher stress as negative and potentially harmful to teachers’ health. The key element in the definition is the teacher’s perception of threat based on the following three aspects of his job circumstances.

1. That demands are being made on him.
2. That he is unable to meet or has difficulty in meeting these demands.
3. That failure to meet these demands threatens his mental/physical well being.”

According to United States National Institute of Occupational Safety and Health, Cincinnati, (1999), Job stress can be defined as “the harmful
physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. Job stress can lead to poor health and even injury.

According to a discussion document presented by United Kingdom Health and Safety Commission, London, (1999), “Stress is the reaction people have to, excessive pressures or other types of demand placed on them. According to Denise Allen, (2002), “Stress is a feeling when we loose confidence in our capability to cope with a situation. According to, European Commission’s, Directorate General for Employment and Social Affairs,(2005), “The emotional cognitive, behavioral and physiological reaction to aversive and noxious aspects of work, work environments and work organizations. It is a state characterized by high levels of arousal and distress and often by feelings of not coping.”

1.5.2. NIOSH APPROACH TO OCCUPATIONAL STRESS

On the basis of experience and research, NIOSH favors the view that working conditions play a primary role in causing Occupational stress. However, the role of individual factors is not ignored. According to the NIOSH view, exposure to stressful working conditions (called Occupational stressors) can have a direct influence on worker safety and health. Individual and other situational factors can intervene to strengthen or weaken this influence. The
need to care for her ill mother is an increasingly common example of an individual or situational factor that may intensify the effects of stressful working conditions. Examples of individual and situational factors that can help to reduce the effects of stressful working conditions include the following:

- Balance between work and family or personal life
- A support network of friends and coworkers
- A relaxed and positive outlook

1.5.3. CAUSES OF OCCUPATIONAL STRESS

Nearly everyone agrees that Occupational stress results from the interaction of the worker and the conditions of work. Views differ, however, on the importance of worker characteristics versus working conditions as the primary cause of Occupational stress. These differing viewpoints are important because they suggest different ways to prevent stress at work. According to one school of thought, differences in individual characteristics such as personality and coping style are most important in predicting whether certain Occupational conditions will result in stress. In other words, what is stressful for one person may not be a problem for someone else? This viewpoint leads to prevention strategies that focus on workers and ways to help them cope with demanding Occupational conditions. Although the importance of individual differences cannot be ignored, scientific evidence suggests that certain working conditions are stressful to most people viz the
excessive workload demands and conflicting expectations. Such evidence argues for a greater emphasis on working conditions as the key source of Occupational stress, and for Occupational redesign as a primary prevention strategy.

Job stress has been associated with poor mental and physical health. Job stress may be caused by a complex set of reasons. Some of the most visible causes of workplace stress are:

1.5.3.1. Job Insecurity

Organized workplaces are going through metamorphic changes under intense economic transformations and consequent pressures. Reorganizations, takeovers, mergers, downsizing and other changes have become major stressors for employees, as companies try to live up to the competition to survive. These reformatations have put demand on everyone.

1.5.3.2. High Demand for Performance

Unrealistic expectations, especially in the time of corporate reorganizations, which, sometimes, puts unhealthy and unreasonable pressures on the employee, can be a tremendous source of stress and suffering. Increased workload, extremely long work hours and intense pressure to perform at peak levels all the time for the same pay, can actually
leave employees physically and emotionally drained. Excessive travel and too much time away from family also contribute to an employee's stressors.

1.5.3.3. Technology

The expansion of technology—computers, PDA’s, cell phones, fax machines and the Internet—has resulted in heightened expectations for productivity, speed and efficiency, increasing pressure on the individual worker to constantly operate at peak performance levels. Workers working with heavy machinery are under constant stress to remain alert. In this case both the worker and their family members live under constant mental stress. There is also the constant pressure to keep up with technological breakthroughs and improvisations, forcing employees to learn new things all the times.

1.5.3.4. Workplace Culture

Adjusting to the workplace culture, whether in a new company or not, can be intensely stressful. Making one adapt to the various aspects of workplace culture such as communication patterns, hierarchy, dress code if any, workspace and most importantly working and behavioral patterns of the boss as well as the co-workers, can be a lesson of life. Maladjustment to workplace cultures may lead to subtle conflicts with colleagues or even with
superiors. In many cases office politics or gossips can be major stress inducers.

1.5.3.5. Personal or Family Problems

Employees going through personal or family problems tend to carry their worries and anxieties to the workplace. When one is in a depressed mood, his unfocused attention or lack of motivation affects his ability to carry out job responsibilities.

1.5.3.6. Job Stress and Women

Women may suffer from mental and physical harassment at workplaces, apart from the common job stress. Sexual harassment in workplace has been a major source of worry for women, since long. Women may suffer from tremendous stress such as 'hostile work environment harassment', which is defined in legal terms as 'offensive or intimidating behavior in the workplace'. This can consist of unwelcome verbal or physical conduct. These can be a constant source of tension for women in job sectors. Also, subtle discriminations at workplaces, family pressure and societal demands add to these stress factors.

Uncertainty in workplace can cause high levels of stress. Lack of information or the actions of other people can negatively affect your ability to perform. Causes of uncertainty can be:
➢ Not having a clear idea of what the future holds
➢ Not knowing where your organization will be going
➢ Not having any career development plans
➢ Not knowing what will be wanted from you in the future
➢ Not knowing what your boss or colleagues think of your abilities
➢ Receiving vague or inconsistent instructions

All sorts of things can cause stress: your commute, daily concerns like relationships and money matters, and occasional events such as bereavement and moving house. Stressful aspects of the workplace include:
➢ a poor physical working environment;
➢ excessive working time and workload;
➢ internal politics;
➢ Excessive bureaucracy.
➢ Lack of Role Clarity

These issues arise in workplace everywhere but schools and universities can be particularly stressful places to work. Reports suggest that levels of stress in the education sector are well above the average for industry and society in general. Teachers and lecturers are subject to additional pressures such as:
➢ low public esteem;
➢ increasingly difficult parents and students;
1.6. SYMPTOMS OF WORK-RELATED STRESS

Defining a clear link between occupational causes, and the resulting symptoms is much harder for a condition such as stress than is it for a disease such as Mesothelioma (which is only caused by exposure to asbestos). Because many of the symptoms of stress are general - such as increased anxiety or irritability - it is easy for them to be ascribed to a characteristic of the worker, rather than to a condition of the work. However, there is mounting scientific and medical evidence that certain types of work and work organisation do have a measurable and verifiable impact on the health of workers. The range of symptoms includes the following:

- Physical Symptoms
- Mental Health Symptoms
- Psychological Symptoms
- Asthma
- Irritability
- Smoking
- Ulcers
- Depression
- Heavy drinking
- Heart disease
- Anxiety
- Eating Disorders
- Diabetes
- Burn out
- Increased sickness
- Thyroid disorders
- Withdrawal
- Low self esteem

etc.
1.6.1. SYMPTOMS

The signs of job stress vary from person to person, depending on the particular situation, how long the individual has been subjected to the stressors, and the intensity of the stress itself. Typical symptoms of job stress can be:

➢ Insomnia
➢ Loss of mental concentration,
➢ Anxiety
➢ Absenteeism
➢ Depression,
➢ Substance abuse,
➢ Extreme anger and frustration,
➢ Family conflict
➢ Physical illnesses such as heart disease, migraine, headaches, stomach problems, and back problems.

You may believe you can simply work through your stress and recover when life calms down. In reality, stress will undermine your ability to get things done and can affect your physical and mental health. There are three groups of symptoms:
1.6.1.1. Physical Symptoms

- Sleep is disturbed and less restful.
- Complaints of general aches and pains may sound petty, but people living with stress often find aches lasting longer and developing into tense muscles and a general lethargy.
- Headaches and migraines become more frequent.
- You can become more susceptible to colds and flu.
- In the longer term, you may be at greater risk of heart attacks and stroke.

1.6.1.2. Mental and Emotional Symptoms

- You may find yourself often irritable and withdrawn.
- You may find it hard to maintain your concentration, and become increasingly forgetful.
- Anxiety and depression are conditions also commonly associated with stress.

1.6.1.3. Behavioural Symptoms

- You may increase your consumption of stimulants such as alcohol and nicotine.
- Your eating habits may change frequently.
- You can become less reliable – less punctual, more often absent from work or more accident-prone.
Personal relations can become strained, often for no apparent reason.

In isolation, these symptoms may be relatively minor but if you are experiencing a number of them, now may be a good time to attempt to identify the cause.

1.7. DESIGN OF THE STUDY

1.7.1. METHOD AND PROCEDURE

Methodology makes the most important contribution towards enrichment of any study. By Methodology of any research, we mean the selection of the representative sample from out of general population, applying appropriate research tools and techniques, collecting relevant data, analysis and interpretation of the same for scientific investigation of the problem.

1.7.2. DESIGN OF THE STUDY

Having reviewed the related literature and researchers on different dimensions of occupational stress, the researcher proceeds to formulate the plan and design. Design is the process of making decisions before a situation arises in which the decision has to be carried out. It is a process of deliberate anticipation directed towards bringing unexpected situation under control (Ackoff, 1953). The present study entitled “Occupational Stress of Higher Secondary school Teachers in Thanjavur Town” can be described as a
The descriptive research studies are designed to obtain pertinent and precise information concerning the current status of phenomena and, whenever possible, to draw valid generalizations, conclusions from the facts discovered. Survey studies are conducted to collect detailed description of existing phenomena with the intent of employing data to justify current conditions and practices or to make more intelligent plans for improving them. Their objective is not only to analyze, interpret and report the status of educational institutions, group or area in order to guide, practice in the immediate future. It is descriptive in the sense that it sets to describe the nature and distribution of variables, which involves the comparison of occupational stress among different Higher Secondary school teachers of Thanjavur Town.

1.7.3. STATEMENT OF THE PROBLEM

This study looks into the prevalence of stress and causes of Higher Secondary school teachers affecting the teachers in Thanjavur Town. It is an attempt particularly to investigate the factors contributing to stress among teachers. The factors among others include students and teacher’s personalities, job involvement, job anxiety and job satisfaction, school/class environment, and administrative style.
The modern world is said to be a world of achievements as well as a world of stress. It is true because in the process of economic upheaval of future generation the Higher Secondary school teachers play a major part. As the environment changes rapidly the scale of operations also increases and need a degree of stress to drive to achieve the goal. If there is a long gap between demands and resources then the degree of stress will be more in the organization and the educational institution. Work pressure, deadline, over work, difficult colleagues or impossible job demands can all effect, how a worker feels about his or her job. Both performance and job satisfaction are interrelated depending upon number of factors. When the teachers are under the stress in the work place they are reluctant to take up the job. This directly affects the skills and attitudes of the Higher Secondary school teachers.

More specifically, the present study attempted to find answers to these research questions.

**Research Questions**

1. How prevalent is the occupational stress among teachers in secondary schools?
2. What are the major causes of teachers stress?
3. Is teachers stress related to job satisfaction?
4. Is there any relationship between the teachers’ anxiety and the teachers’ personality Traits?
1.7.3. SIGNIFICANCE OF THE STUDY

This Pioneer Study assumes high significance due to the fact that determining what the perceived stressors were for Higher Secondary School Teachers and how they coped with stressors provides vital information about their occupation. These data will provide an important piece of information in understanding the role of these leaders in administering education to future generation in Thanjavur. The conclusion of this study will help stakeholders in programs of education make decisions about determining service training needs, working conditions, and excellence in adapting Pedagogy.

The Indian Education System has often been termed as being “too bookish”. This study aims at exploring the unexplored avenues of Teaching and Teachers. This is a virgin study about occupational stress in Thanjavur Town.

This research is also useful for social researchers, educationists as reference in their advanced research on stress among school teachers. Furthermore, school authorities and Ministry of School Education will have much useful information from the research to motivate the teacher.
1.7.4. OBJECTIVES OF THE STUDY

1. To study and analyse the various socio-demographic factors contributing to occupational stress among higher secondary school teachers in Thanjavur.

2. To examine the various dimensions of occupational stress as experienced by higher secondary school teachers in Thanjavur.

3. To critically evaluate the role of an individual’s personality and job satisfaction leading to occupational stress.

4. To find out the association between various dimensions of occupational stress with selected socio demographic factors as perceived by higher secondary school teachers in Thanjavur.

5. To offer suitable, implementable suggestions for reducing occupational stress among higher secondary school teachers in Thanjavur.
1.7.5. RESEARCH HYPOTHESIS

Through Chi-square tests the following relationships have been identified with the help of hypothesis testing.

1. Relationship between the respondents in which type of institute they are employed have tested with the variables of the working environment like have no caste and creed practices, having no petty politics and not encouraging gossiping in their institutions.

2. Perception of overburden in the job tested for its relationship with suitable working hours allotted considering the teaching job as a good one, diagnosed with any stress related diseases, etc.,

3. Self satisfaction in the job tested with long-time working hours without fatigue, preparation at home itself considering the work as recreation, etc.,

Through one-way Anova whether the following variations existing or not have been identified.

1. Variations between the negative variables in the job satisfaction scale like not want to engage after working hours, like to stay at home compared to job and more interest only in the initial periods are tested.

2. Variations between the positive variables in the job satisfaction scale like happiness in completing the job, no fatigue for long hours, full commitment, and preparation at home to teach are tested.
3. Under work stress index the variations between the variables like recognition, regular increments, positive motivation and provision for yearly vacations are tested.

4. Under work stress index the variations between the variables like encouraging students for interaction, enjoy taking class, students looks eagerly for the classes and sense of achievement are tested.

5. Under job satisfaction index the variation between the negative variables like need more pay, no opportunities for progress, services are not according to their tastes are tested.

Through one-way Anova whether the following variations existing or not have been identified.

1. Variation between the various demographic variables with the respondents happiness while completing their job are tested.

2. Similarly the variations between the various demographic variables with the respondents sense of achievement in their career are tested.

3. Variation between the respondents in approaching their top level and the hearing /concerning of the top level towards respondents are tested.

4. Variation between the overburnden in their job with the busy working hours are tested.
Multiple correlations

1. Through weighted average method, relevant positive variables from each major factor of the job involvement scale, work stress index and job satisfaction index are condensed and tested for whether the correlation existing among the three major factors.

2. In the similar manner of weighted average method, correlation between Eysenck’s personality inventory and Job anxiety scale are tested.

3. Through weighted average method, taking negative variables from job satisfaction scale and positive variables from work stress index, the correlation between these two factors are identified.

4. This test identifies whether there is a difference existing between the factors the job involvement scale, the Occupational stress index and the job satisfaction scale through Kurskal-Wallis test.

5. This test identifies whether there is a difference existing between the key Demographic variables with the factors the Job involvement scale, the Occupational stress index and the job satisfaction scale through Kurskal-Wallis test.

6. This test identifies whether there is a difference existing between the Eysenck’s personality inventory scale and the job anxiety scale.
1.7.6. RESEARCH DESIGN

This is done by using demographic characteristics that would be covered in a descriptive research. Descriptive study is undertaken in order to ascertain and describe the characteristics of the variables of interest in situations.

1.7.7. SAMPLING FRAME

Primary data needed for the study was collected through questionnaire issued to Higher Secondary school teachers in Thanjavur town, who constitute the sample for the study. The represented wide spectrum of Higher Secondary school teachers are located mainly in Thanjavur Town and sample consists of all Higher Secondary school teachers belonging to both Government, Government aided schools & Private Schools in Thanjavur.

1.7.8. SAMPLING DESIGN

The researcher has drawn a sample of size (n) in such a way each the "N" members of the population has the same chance of being included in the sample. Further, in order to carry out data collection effectively and in a more practical way non-random disproportionate stratified sampling method has been adopted.
Here, strata represent Government, Government aided and private schools and disproportionate represents not having an equal sample size in any of the each strata and the non-random represents there is no equal chance provided to the samples to be selected in this study.

1.7.8.1. Characteristics of sample

Herein the researcher has drawn the sample from Higher Secondary school teachers in Thanjavur town.

The sample of the study comprised of 260 Higher Secondary school teachers (Male=124 and Female=136) randomly drawn from Government, Government aided and private schools in the town of Thanjavur.

1.7.8.2. Sampling Population

The study was conducted among teachers of Higher Secondary schools in Thanjavur town and the universe of the study includes 30 schools located within the town limit and 260 Higher Secondary school teachers were chosen.

The following schools were drawn from in and around Thanjavur for the study.
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<th>School Name</th>
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<tbody>
<tr>
<td>1</td>
<td>Uma maheswara Higher Secondary School</td>
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<td>2</td>
<td>Selvaraj Higher secondary School</td>
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<tr>
<td>3</td>
<td>St. Antony's Higher Secondary School</td>
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<td>4</td>
<td>Maxwell Matriculation Higher secondary School</td>
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<td>5</td>
<td>Blake Higher secondary School</td>
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<td>6</td>
<td>Government higher secondary school for deaf</td>
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<tr>
<td>7</td>
<td>Thanjavur Oxford Public School</td>
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<tr>
<td>8</td>
<td>St Joseph's Girls Higher Secondary School</td>
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<td>9</td>
<td>Rajah's Higher Secondary School</td>
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<td>10</td>
<td>Seventh Day Adventist English School</td>
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<td>11</td>
<td>Veeraraghava Higher Secondary School</td>
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<td>12</td>
<td>Don Bosco Matriculation School</td>
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<td>13</td>
<td>St Peters Higher Secondary School</td>
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<td>14</td>
<td>Kamalam Subramaniam Higher Secondary School</td>
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<tr>
<td>15</td>
<td>Kalyanasundaram Higher Secondary School</td>
</tr>
<tr>
<td>16</td>
<td>Sacred Heart Girls Higher Secondary School</td>
</tr>
<tr>
<td>17</td>
<td>Girls Christian Higher Secondary School</td>
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<tr>
<td>18</td>
<td>Allwin matriculation Higher secondary school</td>
</tr>
<tr>
<td>19</td>
<td>Ponnaiyah Ramajayam public higher secondary school</td>
</tr>
<tr>
<td>20</td>
<td>Kalaimagal matriculation Higher secondary school</td>
</tr>
<tr>
<td>21</td>
<td>Chirsturaj matriculation Higher secondary school</td>
</tr>
<tr>
<td>22</td>
<td>Annai velankannai higher secondary school</td>
</tr>
<tr>
<td>23</td>
<td>Auxillium higher secondary school</td>
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<tr>
<td>24</td>
<td>Thirumagal higher secondary school</td>
</tr>
</tbody>
</table>
1.7.9. DATA COLLECTION METHOD

1.7.9.1. Primary Data

Primary data are observed and recorded as part of original study. The work of collecting original data by the researcher for the study is known as primary data. The data used in this study was collected under the control and supervision of the concerned researcher.

1.7.9.1.1. Occupational Role Questionnaire

The occupational stress (of Higher Secondary school teachers) is measured by a set of five scales, which are collectively called the Occupational Role Questionnaire (ORQ).

Eysenck’s Personality Inventory (EPI): This questionnaire measures the type of personality of respondents and the extent to which, what type of personality are prone higher to stress.
Job Anxiety scale: (JA) measures the extent to which the respondents are anxious towards their job and their ‘comfort level’ in the job.

Job Involvement Scale (JI): measures the extent to which the respondents discharge their duties and responsibilities of their job.

Occupational stress Index: (OSI) is used to find the level of stress experienced by teachers while discharging the duties and to how much extent the infrastructure facilities and the administrative procedures of the institutions aid in creating a minimized stress environment.

Job Satisfaction Index (JSI) measures the extent to which the respondents are Satisfied with their Job.

1.7.9.2. Secondary Data:

Data is collected from internet, journals, reports, books, articles, research papers, websites, publications, manuals, and booklets. The Researcher has used all the above mentioned ways.
1.7.10. PILOT STUDY

A pilot study was first carried out on a sample of 50 Higher Secondary school teachers at random. They were provided with questionnaire and their responses were collected and analyzed.

The main objectives of this pilot study were to understand the following:

1. Expected level of response and co-operation for the study.


Following were observed during the pilot study:

1. The responses were mostly identical.

2. All respondents were hesitantly co-operative to the interviewer.

1.7.11. DATA COLLECTION PROCEDURE

The researcher used a standard questionnaire as a primary tool for data collection. A total of 260 questionnaires were issued through personal contacts, after obtaining official permission from Higher Secondary schools in Thanjavur town and through the assistance obtained from many respondents working in Government, Government aided and private Higher Secondary schools.
1.7.11.1. Scaling Technique in the Questionnaire

The questionnaire used comprises both optional type and statements in Likert’s 5 point scale. The responses were obtained from the Higher Secondary school teachers in the 5 point scale, which ranges as follows:

5- Strongly Agree, 4- Agree, 3- Undecided, 2- Disagree, 1- Strongly Disagree

1.7.12. STATISTICAL TOOLS USED

Statistical tools are used to compare two or more series of data to describe the relationship or the distribution of two or more series of data. Percentage analysis test is done to find out the percentage of responses of the respondents. In this tool various percentage are identified in the analysis and they are presented by the way of bar and line diagrams in order to have better understanding of the analysis. The following tests have been used for the study;

1. Chi-square,

2. The kurskal-Wallis Test,

3. One way ANOVA test,

4. Two way ANOVA test,

5. Coefficient of correlation,

6. Multiple Correlation, and

7. Weighted average analysis.
1.7.12.1. Percentage Method

The percentage method was extensively used for findings of various details. It is used for making comparison between two or more series of data.

1.7.12.2. Chi-Square Test

At times, the researcher is interested in determining whether the number of observations or responses that fall into various categories differs from chance. If the data are nominally scaled, a chi-square test is applied. When tests are undertaken to examine whether the sample data support the hypothetical distribution, such problems are called test of goodness of fit.

1. State of null hypothesis and calculate the number in each category if the null hypothesis were correct.
2. Determine the level of significance, that is, how much risk of the Type I error the researchers is prepared to take.
3. Calculate $\chi^2$ as follows

$$ \chi^2 = \sum_{i=1}^{k} \frac{(O_i - E_i)^2}{E_i} $$

Where,

- $O_i = $ Observed frequency in $i^{th}$ category
- $E_i = $ Expected frequency in $i^{th}$ category
- $k = $ Number of categories
4. Determine the number of degrees of freedom. For the specified level of significance and the degrees of freedom, find the critical or theoretical value of $\chi^2$.

5. Compare the calculated value of $\chi^2$ with the theoretical value and determine the region of rejection.

1.7.12.3. Correlation

When we are interested in measuring the degree of relationship between two variables, we use another concept, Coefficient of correlation. The two terms correlation and regression or sometimes used interchangeably.

Correlation is a statistical technique used for measuring the relationship or inter-dependence of two or more variables, none of which is restricted by the researchers.

1.7.12.4. Multiple correlations

An approach to the multiple regression analysis is to sum the squared correlations between the predictor variables and the criterion variable to obtain an index of the over-all relationship between the predictor variables and the criterion variable. However, such a sum is often greater than one, suggesting that simple summation of the squared coefficients of correlations
is not a correct procedure to employ. In fact, a simple summation of squared coefficients of correlations between the predictor variables and the criterion variable is the correct procedure, but only in the special case when the predictor variables are not correlated. If the predictors are related, their inter-correlations must be removed so that only the unique contributions of each predictor toward explanation of the criterion.

1.7.12.5. Analysis of Variance

This is used to test the significance of the differences among more than two sample means. The steps followed are,

1. Between columns variance was calculated by the following formula
   \[ \sigma^2 = \frac{\sum n_j (x_{ij} - \bar{x}_j)^2}{k-1} \]

2. Within the column variance was calculated by using the following formula.
   \[ \sigma^2 = \frac{\sum [n_j - 1 / n_i - k] S_j^2}{n_i} \]

3. F ratio was computed by the following formula
   \[ F = \frac{\text{Between column variance}}{\text{Within column variance}} \]

4. The Null Hypothesis (H_0) and Alternative Hypothesis (H_a) were framed as stated below.

   H_0 : No significant difference among sample means.

   H_a : Significant difference exists among sample means.
5. When the probability value of F ratio was more than the significance value \( \alpha = 0.05 \) the \( H_0 \) was not rejected. When the probability value of F ratio was less than the 0.05 level the \( H_0 \) was not accepted.

6. Homogeneity test was also used to classify the sample means into groups. When all the sample means were in the same group homogeneity was established. Otherwise heterogeneous nature was identified.

7. In this study ANOVA was used to find out the significance of the differences between different variables of the samples selected.

1.7.12.6. The Kurskal-Wallis Test

This is a direct generalization of the Mann-Whitney test to the case in which we have three or more independent groups. It tests the null hypothesis that all samples came from identical populations. As against this, the alternative hypothesis is that the means of the populations are not all equal.

To perform the Kruskal-Wallis test, we have to rank all scores without regard to groups to which they belong and then compute the sum of the ranks for each group. The sums are denoted by \( R_i \). If null hypothesis is true, we would expect the \( R_i \)s to be more or less equal.

The formula used in this test is

\[
H = \frac{12}{N(N+1)} \sum_{i=1}^{k} \frac{R_i^2}{n_i} - 3(n-1)
\]
Where H is test statistic, \( n = n_1 + n_2 + \ldots + n_k \) is the total number of observations in all samples and \( R_i \) is the sum of ranks of all items sample i.e., If the null hypothesis is true and each sample is at least of size 5, the sampling distribution of this statistic can be approximated closely with a chi-square distribution with \( K-1 \) degrees of freedom. Consequently, we can reject the null hypothesis at a level of significance if \( H \) exceeds \( x^2_a \) for \( K - 1 \) degree of freedom.

1.7.12.7. Weighted average

**Weighted average** or weighted mean is an average which is obtained by combining different numbers (e.g. prices or index numbers) according to the relative importance of each. A weighted average or mean is one where each item being averaged is multiplied by a number (weight) based on the item’s relative importance, rather than treating each item equally. The weights or weightings are the equivalent of having that many similar items with the same value involved in the average. The result is summed and the total is divided by the sum of the weights. An arithmetic average can be considered a special case where all values are valued (weighted) equally.
1.7.13. LIMITATIONS OF THE STUDY

1. This study was limited by the individual’s perception of his or her own stressors and stress-coping mechanisms, and the accuracy with which the survey instrument reflected their personal perceptions.

2. There may have been hesitancy by participants to reveal personal information related to their work environment.

3. Since data was obtained during working Hours, the data might not be impartial.

4. The Study has weighed Faculty from Government, Government aided & Private Schools in the same scale.

1.7.14. CHAPTER SCHEME

1. Introduction and Research Design
2. Review of Literature
3. The changing profile, status of Teachers and School Education in Tamilnadu
4. Occupational Stress of School Teachers
5. Analysis and Interpretation
6. Summary of Findings, Suggestions, and Conclusion