



## Readography Makes Learning Stress Free

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### Abstract:

*Learning or Academic stress in students has been on a rise with the increase in competition and pressure on students. It has been observed by many researchers that this is resulting in several mental and physical issues among students. The intention to find a solution to this stress in students inspired this work. We measured learning stress in a group of students in 9<sup>th</sup> and 10<sup>th</sup> standard, implemented **Readography** (it is a skill of turning pages) as a regular learning methodology in the school and found stress to reduce in every student when we again measured stress of the same group of students after 20 days of implementation of Readography.*

**Keywords:** Academic stress, Readography, Learning

### 1. Introduction

It is really difficult to find a generally acceptable definition of stress. A useful definition for this paper is, *a demand made on the adaptive capacities of the mind and body.* (Esis Inc. Research Report, April 2007). It is not events that determine if we are stressed or not, it is how we react to them. If we go to the definition, we feel stressed because of our reaction to the demand. The reaction to demand can be good or bad, so stress can also be good or bad. So what we understand is that stress is an essential element, it becomes harmful when it reaches an intensity that impairs our performance. **For a student learning stress can be said to be experienced when the demand of learning and getting good grades or marks in examination exceeds over the ability to cope or control it.** If we look at the scientific understanding, Stress is the force or distorting influence that is applied to the material. For eg, to cut a glass we make a scratch (a stress created from where the glass breaks), friction in machines is stress which results in breakdown. Stress results in breaking or breakdown if we understand it from science point of view.

Now if we relate with stress in students, can we say that stress results in breaking or a breakdown? Obviously learning stress results in depression which can be said as a breakdown and we hear and see news of students committing suicide which is breaking under stress. Article, "Despite reforms, 9.6% more students ended lives" (**Shreya Bhandary, Times of India Nov 3, 2011**), quotes National Crime Records Bureau (NCRB) and says that students committed suicide in Mumbai in 2010 were more by 9.6% over the previous year. Students accounted for 5.5% of total suicides out of the total suicides in India in 2012. While 5,857 student suicides were reported in 2006, the figure jumped to 7,379 in 2010, according to data released by the **National Crime Records Bureau (2010)**. In other words, 20 students killed themselves every day in 2010, something both academicians and mental health professionals blame on a flawed education system where performance pressure ranks above all else. It's like a pressure cooker situation. Some are just worried of being able to get marks to clear school, while for others it is getting into IIT's or the IIM's. Irrespective of goals, students struggle with a tremendous amount of stress and pressure. We have a range of issues like marks/grades, competition, homework/assignments/projects, parent pressure, competition and so on, which result in stress in students. Outcome of all these is depression, feeling of insecurity, inferiority complex, nervous breakdown, burnout and panic attacks. The definition of stress we started with, it is not events that determine if we are stressed or not, it is how we react to them, students react to the same situation differently. Some experience slight stress and some extreme stress.

## 2. Reasons for Learning Stress in Students

High school students seem especially vulnerable to this reality. Adolescence is a time of rapid biological change, personal development, social interactions, social expectations, and peer influence. The locus of much of this phenomenon is in the school environment. For many students, secondary school is very stressful because during class 10, when the age of students is 16 years, they take an exam that determines the specialized stream they'll pursue during their final two years of schooling. The science stream is most popular because it leads to university programs in engineering and medicine. Stress experiences of the students for meeting excessive academic demands, adjusting to new career opportunities or developing academic careers is termed as "academic career development stress" (Misra & McKean, 2000).

Students feel the effects of stress in harsh and also negative ways. Some of these effects include a sudden drop in grades, depression, general fatigue, insomnia, mood swings, temper tantrums and aggression. Studies show that stress and anxiety during adolescence may even have a negative effect on cardiovascular health of otherwise healthy teenagers. Not only does stress and anxiety affect the human body physically, it also can harm a person's emotional well being as well. Stress and anxiety levels affect the students academically and change the way the person thinks and acts during school or time spent in studying.

Learning environment in the school, inability to work perfectly and failure to achieve anything that is desired is also an important stressor (Dobson 1980). Competition with other students for better grades results in stress (Morris 1990). According to (Zulkifli 1988), teenagers especially those who are students always face learning problems, career management and also problems in solving personal and social matters. These are the factors that contribute to stress in life.

High demand from parents, teachers and the society to succeed in academics creates stress among high school students (Fariza 2005) Mates and Alisson (1992) also confirm that among the academic factor that contributes to the stress in high school students is their desired achievement in academics. Fairbrother & Warn, (2003) researched too many assignments, competitions with other students, failures and poor relationship with other students or lecturers create stress. Students also experience stress because of their perception of the extensive knowledge base required and the perception of an inadequate time says (Carveth et al 1996). Stress may arise due to the academic demands, adjusting to new course, medium of instructions, institutional situations or when developing appropriate communications with classmates and teachers, etc (Akgun et al, 2003). Students report experiencing academic stress at predictable times each semester with the greatest sources of academic stress resulting from taking and studying for exams, grade competition, and the large amount of content to master in a small amount of time (Abouserie, 1994). Overcrowded classrooms and inadequate resources to perform academic work create stress (Awino & Agolla, 2008). The pressure to perform well in the examination or test and time allocated makes academic environment very stressful (Erkutlu & Chafra, 2006). Academic stressors include the student's perception of the extensive knowledge base required and the perception of an inadequate time to develop it (Carveth, Gesse, & Moss, 1996). Fear of academic failure is a definite stressor (Kolko, 1980). Teachers often emphasize the acquisition of knowledge, so they often neglect the emotional feelings of students during the teaching process, which can cause emotional stress and learning problems for students. In addition, students may feel unfamiliar situations like nervousness, worry, frustration, abasement, depression, etc. The instability of these emotions easily initiates unusual behavior, which then affects the learning achievements and adjustment ability of students if appropriate timely counseling is not given by the institutions, teachers and parents, or if they cannot obtain appropriate concern from their peers or siblings (Chen et al, 2006). The pressure to complete the assignments or curriculum in time and the interest in subjects are the most significant academic stressors (Carroll's 1963). These core academic stressors were found to be relatively unchanged overtime, as observed by (Murphy and Archer 1996) as well. Major sources of stress go beyond high parental expectance, too much control of parents, parental monitoring style, lack of support and communication barriers with teachers and classmates, and strict discipline at school and at home (Ray & Goswami, 2000). There exists complex relationship among academic stress, mental health and other background life variables for promotion of adjustment and performance status of the students (Ray & Goswami, 2000; Spielberger & Vagg, 1995).

From all these we can conclude that academic stress arises of;

- Life events (relationship issues in life, death in house, home environment),
- Parent pressure,
- Different aspects academics,
- Relationship with teachers,
- Perception of knowledge to be acquired,
- Perception of time,
- Fear of exams.

Now we come to what we call as learning stress. For understanding the components of learning stress we remove stress arising from life events from the above list.

### 3. Need of This Work

Adolescents have to follow their parents' desires which are preparing them to compete in the social system where the society is scrambling towards modernization so that they are not left behind. If it is not managed well, stress can ignite psychological disturbances among them when they are grown up. These disturbances will cause stress to the adolescents in the future if they are not overcome now. Studies show that stress and anxiety during adolescence may even have a negative effect on cardiovascular health of otherwise healthy teenagers. Not only does stress and anxiety affect the human body physically, it also can harm a person's emotional well. Stress and anxiety levels affect the students academically and change the way the person thinks and acts during school or time spent in studying. A public release date: 21-Oct-2008 by University of Minnesota says, "Our study shows that there is a direct link between college students' health and their academic achievement. This is the first time that anything like this has been published where Grade Point Average is linked to all these behaviors," said Dr. Ed Ehlinger, the director and chief health officer of the University of Minnesota Boynton Health Service. The academic career development stress is an individualized phenomenon, unique to each student and setting (**Hudd et al, 2000**). It is a subjective feeling, which is hard to avoid by students. The sources of academic stress may be life events or chronic strains related to academic programmes and workloads (**Hudd et al, 2000**). Such stress may elicit fear, tension and other psychosomatic problems and may be associated with a variety of serious negative outcomes in the adolescents, including suicidal ideation, smoking (**Naquin & Gilbert, 1996**) Researches even say that stress result in low academic performance as well. Generally, most of the students have the ability to do well on academic curriculum activities and examinations, but because of stress many of them fail to perform at a level commensurate with their intellectual ability (**Spielberger & Vagg, 1995**). When such stress is perceived negatively and becomes excessive, students experience physical and psychological impairments (**Murphy & Archer, 1966**). Students feel acute pressure when taking a high-stakes college admissions test, to the anxiety people with a chronic fear of math experience when sitting in math class effects cognitive functioning. Specifically, these stressful academic situations reduce the working-memory available to attend to a task's information processing requirements and to control its execution (**Beilock, 2008**). In a similar study by **Beilock & DeCaro, 2007** they established relation between academic stress and working memory and said more the stress less is the working memory resulting in poor performance in academics. We can understand the term working memory by the work done by the work done by **Miyake & Shah, (1999)**, working-memory is a short-term memory system involved in the control, regulation, and active maintenance of a limited amount of information immediately relevant to the task at hand. The academic stress related consequences and mental health status have become contemporary pervasive problems of students and academic institutions (**Spielberger & Vagg, 1995**). Consequently, psychologists, counselors, educators, psychiatrists and persons interested in secondary and higher secondary education have become increasingly concerned with dependable preventive measures to protect students from career development stressors and their mental health hazard and develop methods of intervention/ counseling for stress and mental health management. Stress in college students is increasing (**Peden, Rayens, Hall & Beebe, 2001**). **Sax (1997)** found that 9.7% of college freshmen report frequent depression. Additionally, only 48% of female students and 59.3% of male students were confident in their mental health. **Douglas, Collins and Warren (1997)** reported that on the National College Risk survey, as many as 10.3% of the students that participated had serious thoughts of suicide. **Sarafino and Ewing (1999)** emphasize being able to assess and reduce student's stress is of paramount importance. The need of this work arises from the fact that stress results in

poor academic performance, affects mental health to the extent that students not only start thinking about killing themselves but also commit suicide.

#### 4. Hypothesis

- Ho<sub>1</sub>** There will be no significance difference in the mean score of pre test & post test of stress level between all 9<sup>th</sup> standard students.
- Ho<sub>2</sub>** There will be no significance difference in the mean score of pre test & post test of stress level between all 10<sup>th</sup> standard students.
- Ho<sub>3</sub>** There will be no significance difference in the mean score of stress level between the pre test & post test of stress test for all male students.
- Ho<sub>4</sub>** There will be no significance difference in the mean score of stress level between the pre test & post test of stress test for all female students.

#### 5. Methodology

Measure the learning stress of students, teach them Readography, then implement Readography as a regular learning methodology in the school and finally again measure the learning the stress level of students after 20 days of implementation to find the difference in stress level.

#### 6. What is Readography?

Readography is a very simple technique of turning pages and while turning the pages focusing on the pages in a very specific way. Check the video link for details <http://www.youtube.com/watch?v=Dmor44bQO8k>. In the beginning of the paper we understood that learning stress for student can be said to be experienced when the demand of learning and getting good grades or marks in examination exceeds over the ability to cope or control it. If we look at the list of parameters (mentioned in the section: Data Collection) they are the reasons why the demand of learning and getting good grades/marks are beyond the ability or scope of control of the student.

#### 7. Sampling technique

Cluster sampling as the sample group selected is 9<sup>th</sup> and 10<sup>th</sup> standard students from the same school.

#### 8. Creating the Tool

This list of parameters was designed and before finalizing they were discussed with Ms. Leena Purohit (Principal A One School, Gurukul Ahmedabad), Mr. Rakesh Patel (secondary and higher secondary coordinator at Tripada international school, Ahmedabad), Mr. Sailesh (Principal Nalanda School, Ahmedabad) and Mr. Sanjay Tikekar (Principal Prakash Hindi High School, Ahmedabad). One point which was initially in the list, "stress due to competition with other students" was eventually removed because it was found that this will always remain in students.

#### 9. Data Collection

Data collection was done by a written form. Below mentioned is the list of parameter and the question asked so that the students can evaluate themselves on the stress scale. They were supposed to tick their level of stress in front of the parameter to measure the stress level of individual students. For all questions either in pre test or the post test no one was allowed to tick in No Stress.

1. **Difficulty in remembering all that is studied.** The questions so that the students can evaluate themselves are based on the number of readings required to remember. If you are able to remember in 1-2 readings tick in slight stress., if you remember in 3-4 readings then tick in medium stress, if remember in 5-6 readings tick in high stress and finally if anyone requires more than 6 readings to remember or is just not able to remember tick in extreme stress.
2. **Poor interest in some subjects.** The questions asked; do you have a subject which is not interesting tick in slight stress. If you feel one subject that is boring, tick medium stress. If you feel more than one subject is /not interesting/boring tick in high stress. Finally if you feel that because some subject/subjects are boring these effects your result/grades tick on extreme stress.
3. **Parent Pressure.** If you feel parent pressure to get better result always exists and this at times disturbs you as well tick extreme stress. If you feel parent pressure exists most times tick high stress. If you feel parent pressure exists sometimes tick medium stress. Finally if you feel parent pressure exists occasionally or does not exist tick slight stress.

4. **Lack of concentration during study hours.** Lack of concentration during study hours directly impacts your ability to remember whatever you read. So tick the same as you ticked in 1st point.
5. **Worrying about the examinations.** If you worry about exams at times tick in slight stress. If you always worry about exams tick medium stress. If you are afraid of exams tick high stress. If you experience a psychotic response to fear of exams, like when you think of exam you feel uneasy, feel nervous or feel some shivering tick in extreme stress.
6. **Not able to understand the subject.** If you are able to understand in 1-2 readings tick in slight stress., if you understand in 3-4 readings then tick in medium stress, if understand in 5-6 readings tick in high stress and finally if anyone requires more than 6 readings to understand or is just not able to understand tick in extreme stress.
7. **Slow in getting along with the curriculum.** Are you able to complete learning your curriculum always, if yes tick slight stress. If you are not able to complete learning your curriculum sometimes ticks medium stress. If you are not able to complete learning your curriculum most times tick high stress. If you are always not able to complete learning your curriculum tick extreme stress.
8. **Lack of self confidence.** If you sit in the class or even when you think about your examination and you always feel confident about your ability to get desired result/marks/grades tick slight stress. If you feel confident most times tick medium stress. If you feel confident sometimes tick high stress. Finally if you feel confident that you cannot achieve the desired result tick extreme stress.
9. **Hesitate to ask the teacher for detailed explanation.** Are you able to ask the teacher for detailed explanation always, if yes tick slight stress. If you are not able to ask the teacher for detailed explanation sometimes ticks medium stress. If you are not able to ask the teacher for detailed explanation most times tick high stress. If you are always not able to ask the teacher for detailed explanation tick extreme stress.
10. **Biased attitude of the teacher.** Do you think that your teacher's behavior is biased? Not necessary that the teacher is actually biased but if you feel that the teacher is biased then the stress exists. If you feel that the teacher is always biased and this not only disturbs you as well tick extreme stress. If you feel that the teacher is biased most times tick high stress. If you feel that the teacher is biased most times tick medium stress. And the rest tick slight stress.
11. **Monotonous (boring or tedious) teaching style by the teacher.** If you feel that the teaching style of any of your teacher is boring, tedious or monotonous tick slight stress. If you feel more than one teacher is boring tick medium stress If you feel you are not able to understand the subject because of this tick high stress. Finally if you feel that these effects your result/grades tick on extreme stress.
12. **Unable to complete the assignment in time.** If you are not able to complete assignments regularly/daily tick extreme stress. If you are not able to complete assignments more than 50% of times tick high stress. If you are not able to complete assignments less than 50% of times tick medium stress. And finally if you are always able to complete assignments tick slight stress.
13. **Not enough discussion in the class.** If you feel there is always discussion in the class tick slight stress. If you feel there is discussion happening in the class most times tick medium stress. If you feel there is discussion happening in the class sometimes tick high stress. Finally if you feel there is no discussion in the class tick extreme stress.
14. **Syllabus is too lengthy.** Are you able to complete your syllabus always, if yes tick slight stress. If you are not able to complete your syllabus sometimes ticks medium stress. If you are not able to complete your syllabus most times tick stress. If you are always not able to complete your syllabus tick extreme stress.
15. **The teachers do not listen to our ideas.** If you feel that the teacher always listens to your ideas tick slight stress. If you feel that the teacher listens to your ideas most times tick medium stress. If you feel that the teacher listens to your ideas sometimes tick high stress. Finally if you feel that the teacher never listens to your ideas tick extreme stress.
16. **The teacher is fast.** If you feel that the teaching style of any of your teacher is fast tick slight stress. If you feel more than one teacher is fast tick medium stress If you feel you are not able to understand the subject because of this tick high stress. Finally if you feel that these effects your result/grades tick on extreme stress.
17. **Lack of time.** Are you always able to complete both your assignments and syllabus in the available time, if yes tick slight stress. If you are not able to complete both sometimes tick medium stress. If

you are not able to complete both most times tick high stress. If you are always not able to complete both tick extreme stress.

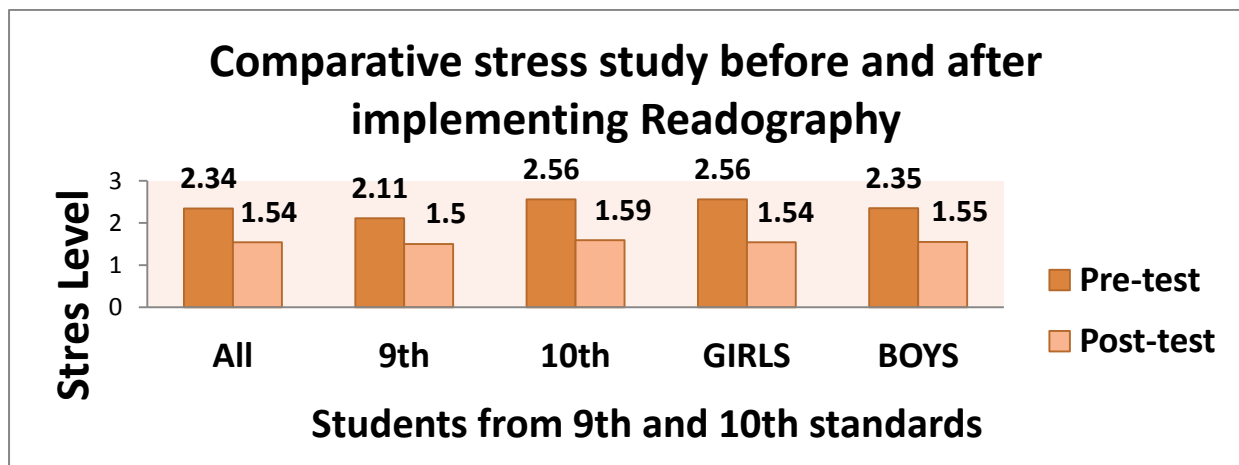
18. **Schools and teachers are under great pressure to produce high test scores; that pressure is passed on to the kid.** If you feel your school puts no pressure tick slight stress. If you feel your school puts pressure sometimes tick medium stress. If you feel your school puts pressure most times tick high stress. Finally if you feel your school always puts pressure tick extreme stress.

### 10. Research Process

We began with the pre test of all students. This was followed with teaching them Readography and implementing Readography in the school. Implementation happened under my supervision. After 7 days of implementation we took a student feedback where they were told to write about their experience or improvement they feel because of implementing Readography. After 20 days of implementation we took the post test with the same tool which was use for the pre test.

### 11. Result and Conclusion

It has been observed that learning stress of every student reduced. The average reduction in the group of 165 students found is 20%. On a stress scale of 4 points where 0 is no stress and 4 is extreme stress.



#### 11.1 Interpretation

##### 9<sup>th</sup> Standard Students

There is a Highly significant difference shown at both the level (i.e. 0.05 & 0.01) among 9<sup>th</sup> standard students. The t-value between the pre test & post test was found **8.88**. It indicates that Readography highly reduce the stress level of the students of standard 9<sup>th</sup>.

##### 10<sup>th</sup> Standard Students

There is a Highly significant difference shown at both the level (i.e. 0.05 & 0.01) among 10<sup>th</sup> standard students. The t-value between the pre test & post test was found **21.08**. It indicates that Readography highly reduce the stress level of the students of standard 10<sup>th</sup>.

##### All boys Students

There is a Highly significant difference shown among all boys students. The t-value between the pre test & post test of all boys was found **10.45**. It indicates that Readography highly reduce the stress level of the boys' students.

##### All girls Students

There is a Highly significant difference shown among all girls students. The t-value between the pre test & post test of all girls was found **11.88**. It also indicates that Readography highly reduce the stress level of the girls' students.

### 11. Limitations of the Study

Since the pre and post tests were taken in group situation in the classroom there is a possibility that some students might have copied from their friend's test and ticked some points which they probably were not able to understand.

## 12. Ideas for Future Research

The same work can be done with graduate and post graduate students and also can be done with students in different countries. It has been observed that the students start enjoying the process of learning, their interest in learning also develops. It would make a wonderful study to find the impact of Readography on the Reward and the Punishment centers in the brain.

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