

Stress and the Brain: How Stress Impacts Our Students' Ability to Learn

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Schools Are Becoming More Stressful

- Societal stressors have been and continue to find their way into our school classrooms.
 - Poverty
 - Social issues
 - Medical conditions
 - Learning Disorders
 - Family issues
 - Cultural issues
 - Exposure to negative media
 - Life change
 - Trauma

Schools Are Becoming More Stressful

- Within the school, students have other concerns to navigate.

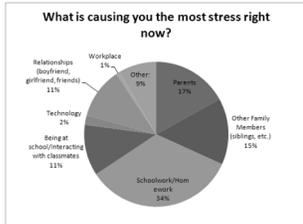
How We Often Think It Is:



How It Really Is:



Schools Are Becoming More Stressful



Schools Are Becoming More Stressful



Schools Are Becoming More Stressful

- One in five school-aged children in our nation has a diagnosable mental disorder.
- Assuming an even distribution, this would amount to four to six students per classroom with some form of chronic or acute mental health concern.
- These numbers cut across SES, culture and academic ability levels.

Schools Are Becoming More Stressful

- Stress Dysregulation (SDR) is a common manifestation in students with mental health concerns, but increasingly are appearing in undiagnosed students.
- Symptoms of SDR include:
 - Quick to anger
 - Inability to self-regulate or calm themselves
 - Sudden withdrawal from learning and social interactions

Schools Are Becoming More Stressful

- More students are arriving at school with SDR and with difficulties in coping, making it hard to build a positive learning environment.
- While SDRs are more observable in schools with with a high proportion of students from families facing major economic or social challenges, **it is also observable in schools that serve students from advantaged families with highly competitive expectations.**

Schools Are Becoming More Stressful



Schools Are Becoming More Stressful

- A new survey of more than 30,000 U.S. teachers finds that most of them report high levels of stress and low levels of autonomy.
- 78% express overwhelming levels of stress.

Schools Are Becoming More Stressful

- Of the teachers reporting critical levels of stress:
 - 60% report significant symptoms of Anxiety
 - 38% report significant symptoms of Depression

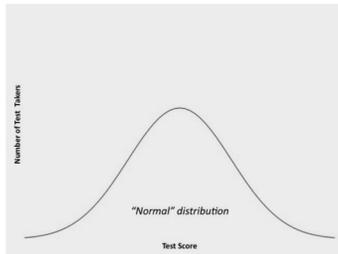
Schools Are Becoming More Stressful

- Counting the Cost:
 - 77% consider leaving the field of teaching.
 - 78% report missing one to three days of work due to mental health concerns.
 - 16% report missing anywhere from 4 days to 6 months due to mental health concerns.
 - 53% believe this is negatively impacting their job performance and student learning.

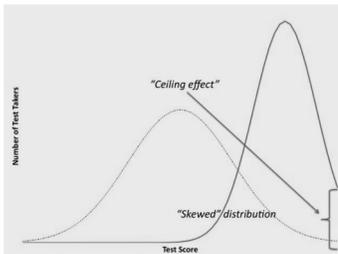
Schools Are Becoming More Stressful

- Similar to our students, **one in five adults** of childbearing age are managing mental health concerns of their own.
- Similar to teachers, parents are struggling with significant work and life stressors of their own.
- Results:
 - The chances of a significantly distressed parent having a significantly distressed child served by a chronically stressed teacher are **higher than anyone would like to believe!**

Stress Levels and the Bell Curve



Stress Levels and the Bell Curve



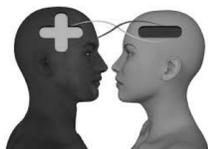
Stress Is Contagious

- Much like any communicable condition, stress is contagious.

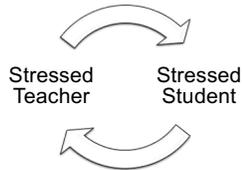
Mirror Neurons, Our Friends, Our Foes

- Operation and Function
 - Observation of an action automatically triggers simulation of that action.
 - Provide a neural basis for imitation and empathy (inner imitation)

Projector or Reflector



Stress Precipitates Stress



The Brain and Behavior

- What we know:
 - The Brain is involved in everything we do.
 - When your brain adapts to the needs of the environment in which you find yourself, you work right.
 - When your brain doesn't adapt, you don't work right.
 - Certain Brain Systems are involved with certain behaviors.
 - While correct treatment can help, the wrong treatment can make matters worse.

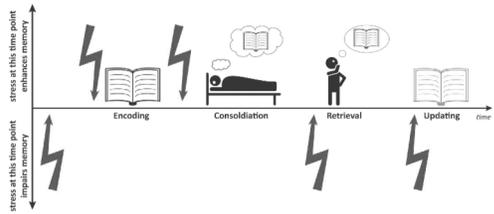
Cortisol Levels and Cognitive Functioning



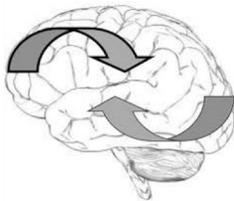
Cortisol Levels and Cognitive Functioning

- Stress influences memory through the release of cortisol.
- Acute, tolerable stress can result in emotionally arousing memories under stress that are more readily remembered than events that are neutral, releasing no cortisol.
- Chronic or high levels of stress result in impaired communication, decreased ability to problem solve, impaired memory and recall.

Cortisol Levels and Cognitive Functioning



Top-Down vs. Bottom-Up Processing



Example: Stress' Corrupting Influence

- Stress can turn good things into bad by applying a meaning that harms us.
- For example, if I phone someone and leave a message and they don't get back to me I can tell myself this may be because:

Stressed Interpretation

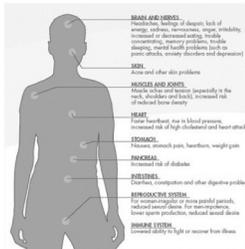
Top Down Processing

1. ...they are away.
2. ...they haven't checked their messages.
3. ...their cell phone isn't working or they called me on another line.

Bottom-Up Processing

1. ...they don't want to talk to me.
2. ...they are mad at me.
3. ...they don't like me.
4. ...they have been in an accident!

Other Physiological Impacts of Stress



What Is Causing the Stress?

- Many things can increase a student's stress level.
- Increased stress,
- physical illness,
- problems at school,
- changes in family situations,
- trauma/violence in the community or
- substance use

What Is Causing the Stress?

- Within the home.
- Changes to family structure
- Changes in relationship with boyfriend, girlfriend, partner, spouse
- Loss of any kind: pet, family member or friend due to death or relocation
- Strained relationships with roommates, loved ones
- Changes in friendships
- Fights or arguments with loved ones or friends
- Trauma/violence
- Poverty

What Is Causing the Stress?

- At School
- Worrying about upcoming projects or tasks
- Feeling singled out by peers; feelings of loneliness
- Mounting pressures, anxiety about deadlines
- Lack of understanding from peers, parents or teachers who may not understand them
- Real or perceived discrimination
- Bullying
- Just trying to fit in

What Is Causing the Stress?

Internal Vulnerabilities

- Coping style
- Psychiatric challenges
- Emotional regulation
- Trauma history

External Vulnerabilities

- Family resources
- Social relationships

Social Media and Mental Health

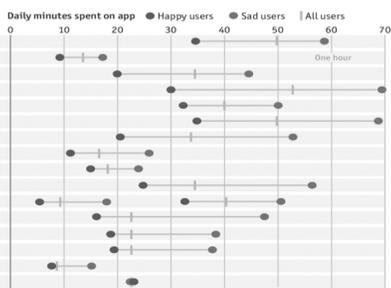
- According to a survey conducted in 2017 by the Royal Society for Public Health, Britons aged 14-24 believe that Facebook, Instagram, Snapchat and Twitter have detrimental effects on their wellbeing.
- On average, they reported that these social networks gave them extra scope for self-expression and community-building.
- But they also said that the platforms exacerbated anxiety and depression, deprived them of sleep, exposed them to bullying and created worries about their body image.
- Academic studies have found that these problems tend to be particularly severe among frequent users.

Unhappy hours

Users of Moment*, April-May 2018

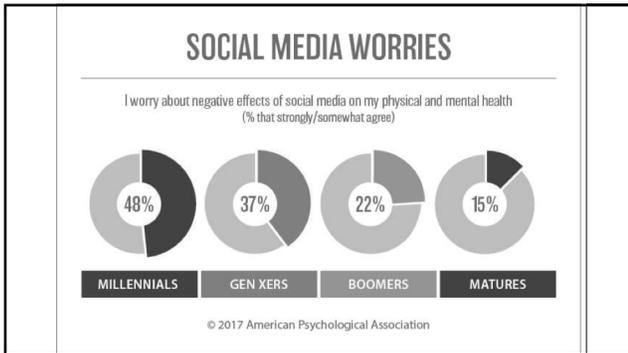
% of users who are happy with the amount of time they spend on each app

Instagram	37
Tinder	40
Facebook	41
Reddit	43
Snapchat	57
YouTube	57
Twitter	59
Pinterest	64
Tumblr	66
WhatsApp	69
LinkedIn	70
Messenger	80
Messages	83
Phone	84
Mail	85
FaceTime	91



Source: Moment
Economist.com

*A time-management app





Conditioned Responses

• "How are you doing?"

Exercise

- What is happening in this picture?
- Turn to an elbow partner and share your response.

Stress Test

- First, how are you feeling?
- Turn to an elbow partner, take turns and ask, "What stressors are you carrying with you today?"
- You may not respond with "I'm fine".
- Check yourself for anxiousness, unresolved stress, relationships, performance, connectedness, sadness and grief.

Stress Testing Your Students

- Rules of Engagement
 - Observe Carefully
 - Be Available
 - Listen Actively
 - Respond Thoughtfully

Stress Testing Your Students

- **Observe Carefully**
 - Inability to concentrate
 - Poor judgment
 - Moodiness
 - Irritability or short temper
 - Feeling overwhelmed
 - Constant worrying
 - Chest pain, rapid heartbeat
 - Frequent sickness
 - Inability to relax
 - Procrastination or neglecting responsibilities

Stress Testing Your Students

- **Signs of Unresolved Stress**
 - Decreased appetite, other changes in eating habits
 - Headache
 - New or recurrent bedwetting
 - Sleep disturbances
 - Upset stomach or vague stomach pain
 - Anxiety, worry
 - Not able to relax
 - New or recurring fears (fear of the dark, fear of being alone, fear of strangers)

Stress Testing Your Students

- **Be Available**
 - Notice times when your students are most likely to talk — for example, at greeting time, during free time, at the end of the day — and be fully available to just listen.
 - Start the conversation; it lets your student know you care about what's happening in their lives.
 - Learn about your student's interests — for example, favorite music and activities — and show interest in them.
 - Initiate conversations by sharing what you have been thinking about, or what other students may be thinking about, rather than beginning a conversation with a question.

Stress Testing Your Students

- **Listen Actively**
 - When your students are talking about concerns, stop whatever you are doing and listen.
 - Express interest in what they are saying without being intrusive.
 - Listen to their point of view, even if it's difficult to hear.
 - Let them complete their point before you respond.
 - Repeat what you heard them say to ensure that you understand them correctly.
 - Realize that your students may test you by telling you a small part of what is bothering them.
 - Listen carefully to what they say, encourage them to talk and they may share the rest of the story.

Stress Testing Your Students

- **Respond Thoughtfully**
 - Soften strong reactions — students will tune you out if you appear angry or defensive.
 - Express your opinion without minimizing theirs — acknowledge that it's OK to disagree.
 - Resist arguing about who is right. Instead say, "I know you disagree with me, but this is what I think."
 - Focus on your student's feelings rather than your own during your conversation.
 - Ask your student what they may want or need from you in a conversation, such as advice, help in dealing with feelings or assistance in solving a problem.

Inoculating Your Students and Yourself



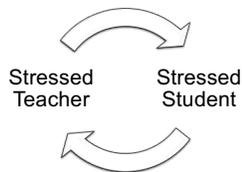
Before, During, After (BDA)

- You have power to intervene effectively only three different times in the stress cycle!
 - Before the stress happens.
 - During the stressful event.
 - After the stressful event has concluded.
- Don't miss your opportunity!!

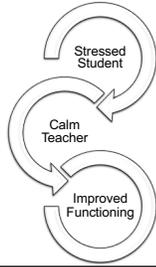
Inoculating Your Students and Yourself

- Block out the negative
 - We all have 'mirror neurons' — a collection of brain cells that can mimic any emotion we come across automatically.
 - We can attempt to block our brain's mirrors
 - Encourage your student to envision something they love or that makes them laugh just before entering situations they report as stressful.
 - Encourage them to focus on something positive in the situation, the people they like, the picture on the wall, anything that will get their focus off of the negative.

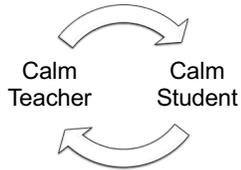
Stress Precipitates Stress



Making the Switch



Calm Precipitates Calm



Inoculating Your Students and Yourself

- Encourage your students to talk to someone they trust.
- Identify with your student people they feel comfortable with in the school.
- Make a plan with them about how they might access the identified person when they are feeling stressed.
- Work with the school on making this an accommodation for your student.

Inoculating Your Students and Yourself

- Remind your students to "breathe it out".
- When your student is feeling stress, encourage them to pay attention to the length of their exhalates and inhales.
- Shoot for a target of less than 12 breaths a minute as slower respirations will decrease the body's stress response.

Inoculating Your Students and Yourself

- Build up you student's emotional immune system.
- Help them develop a healthy self-care regimen.
- Identify activities that relax and recharge them.
- Encourage the development of hobbies that are not related to media.
- Yoga, meditation, physical activities are some of the best at reducing and mitigating stress.

Inoculating Your Students and Yourself

- Look ahead!
- Encourage your students to hang on to something they are looking forward to in the midst of stressful events.
- After Math is Phy. Ed!
- After Phy. Ed. Is Math!!

Inoculating Your Students and Yourself

- Work up a sweat.
- Exercise may be the quickest way to get rid of built-up stress.
- Physical activity triggers your body to release endorphins—"feel good" chemicals that serve as your body's natural pain killers and stress reducers.
- Even five minutes of aerobic activity can reduce your student's anxiety and help them cope better with stress.

Inoculating Your Students and Yourself

- Put pen to paper.
- Encouraging your student to put their emotions into words can also help them slough off stressful events.
- Encourage them to try writing nonstop for a few minutes about their feelings.
- Doing so can help them organize their thoughts and better cope with their emotions.
- Once down on paper, these ruminations are no longer playing on an endless loop inside their head.

Inoculating Your Students and Yourself

- Inoculation can curb the spread of stress.
- As more students, teachers and parents are inoculated, chronic stress can be significantly reduced.

Inoculating Your Students and Yourself

- Positive self-talk.
- Positive self-talk makes students feel good about themselves and the things that are going on in their life.
- It's like having an optimistic voice in your head that always looks on the bright side.
- **Examples:**
 - 'I am doing the best I can'.
 - 'I can totally make it through this exam'.
 - 'I don't feel great right now, but things could be worse'

Just for You

- **Maintaining and/or Increasing Your Level of Stress Requires You to:**
 - Do nothing.
- **Reducing Your Level of Stress Will Require You to:**
 - Take the initiative.

Just for You

- **Stop and Look at Yourself**
 - Social withdrawal.
 - Over-sleeping.
 - Lack of sleep.
 - Over-eating sweet or fatty foods.
 - Mindlessly watching the TV without caring what you watch.
 - Using medication to relax you.
 - Smoking.
 - Drinking too much alcohol.
 - Taking out stress on others (e.g. in arguments or furious outbursts).

Just for You

• Accept What You Cannot Change

- We can accept what we cannot change by changing what we can.
- Make choices that are realistic, not out of reach.

Just for You

• Be Physically Active

- Dance to your favorite song.
- Walk to the store instead of driving.
- Walk your dog or borrow someone else's for a half an hour.
- Take the stairs every time there is an option.
- Find and exercise buddy, and go to classes together.

Just for You

• Build and Maintain Relationships

- Call, text or email an old friend to catch up.
- Schedule weekly meetups with at least one friend.
- Get to know people by signing up for an evening class or joining a club.
- Consider volunteer work.
- Remember, social media has diminishing returns.

Just for You

• **Change Your Attitude**

- Think positive thoughts and say positive things.
- Stop overthinking things.
- Set "worry periods" – symptom prescription.
- Deliberately reframe life's challenges – ask yourself what opportunities they might present.
- Make a gratitude list – keep this as a "go to list" that you can shift to during times of stress.
- Engage in **active** problems solving.
- Find lessons.
- Avoid perfectionism, set practical, realistic goals.

Just for You

• **Develop a Personalized "Stress Relief" Toolkit**

- Meditate
- Meet regularly with friends
- Book a massage
- Interact with an animal
- Take a walk in a peaceful setting
- Keep a journal
- Read a good book
- Watch a comedy -- Laugh

Contact Information

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"We are all only given a little madness—we mustn't lose it."

--Robyn Williams
