

Stress: What Happens to a Teacher's Brain when it Reaches Burnout?

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This post is part of a 4 part series on stress and learning. To see the rest of the series click [here](#).

[Burnout](#). You can't have burnout unless there was once a fire. So what happens when a teacher reaches the burnout stage? What has happened when the passion for teaching begins to fade and teachers no longer have the energy and enthusiasm they once had? Their work becomes overwhelming and they feel little or no personal reward for the amount of effort they put forth. What has happened? Neurologically, how has the brain changed? Can we prevent this from happening in our school systems today? And more importantly, can the flame be rekindled... can people suffering from burnout ever recover?

In 1974, [Herbert Freudenberger](#), psychologist, was the first to coin the term "burnout." In his book, [Burnout: The High Cost of High Achievement](#), Freudenberger wrote, burnout is "the extinction of motivation or incentive, especially where one's devotion to cause or relationship fails to produce the desired results" (Freudenberger, 1974).

What happens to the brain neurologically during burnout?

[Esther Sternberg, M.D.](#) in her book, [The Balance Within: The Science Connecting Health and Emotions](#), discusses her work where she examines the relationship of the [central nervous system](#) and the [immune system](#). Immune molecules made in the blood can activate brain function. She explains how stress directly connects our emotions to our physical health.

According to Sternberg, nurses and teachers are among those at highest risk for burnout. Sternberg writes:

“These professionals are faced daily with caregiving situations in their work lives, often with inadequate pay, inadequate help in their jobs, and with too many patients or students in their charge. Some studies are beginning to show that burnt-out (nurses and teachers) may have not only psychological burnout, but also physiological burnout: a flattened [cortisol response](#) and inability to respond to any stress with even a slight burst of cortisol. In other words, chronic unrelenting stress can change the [stress response](#) itself. And it can change other [hormone systems](#) in the body as well (Sternberg, 2008).”

(For a deeper understanding of how cortisol affects the brain, please look for my article in a series on stress, titled; [***Stress: Its Neurological Implication on Learning.***](#))

A study conducted by Armita Golkar at the Karolinska Institute in Sweden, and cited by the [Association for Psychological Science](#), examines how burnout can actually change the brain. When one has a feeling of ineffectiveness, detachment, or feels unvalued, many times it’s because of [chronic stress](#). The neural circuits in the brain actually change. This makes it more difficult for the individual to handle stressful situations. This vicious cycle continues so “the more stressed you are, the harder it is to deal with stressors in the future” (Golkar, 2014).

The study looked at a group that was considered burnt-out and a control group that was considered healthy, not affected by burnout. Using a [functional MRI \(fMRI\)](#) to evaluate functional brain connectivity, they found that the burnt-out workers had less-control over their reactions to negative experiences. They were not able to control [distress](#) at times (Golkar, 2014).

So, what was happening to the brain? Looking closely at the [amygdala](#) (the area associated with anxiety and fear) was found to be enlarged in those

individuals who were burned-out and had occupational stress. They also found that the connections were weaker between the [prefrontal cortex](#) and the amygdala. “These individuals have a feeling of being overly sensitive to negativity, or unable to control emotions, when burnt out, they confirm that such emotional impairments indeed have neurobiological underpinnings...” (Golkar, 2014).

Burnout is much more than just an [emotional response](#) to long hours of work. There is more and more scientific evidence showing that burnout takes a physical toll that concerns more than just teaching and our professional lives. It stifles healthy professional growth. Chronic stress impairs personal and social functioning, “...it also can overwhelm their [cognitive skills](#) and [neuroendocrine systems](#) – eventually leading to distinctive changes in the anatomy and functioning of the brain” (Michel, 2016).

Scientists now know that the brain’s physical structure changes and scientists are seeing that burnout can affect cognitive function that are related to creativity, working memory, problem solving and other [executive functions](#) (Deligkaris, 2014).

What causes burnout?

Lack of Control: When you don’t feel you have a lot to say with what is going on in your job, or you have a sense that you have limited control of what you actually do in the classroom, leads to a feeling of helplessness. With the increase of district, state, and national mandates, teachers have more and more expectations they must meet making them feel they have little control over what is actually taught in the classrooms.

[Rex Miller](#) in his book [*Humanizing the Education Machine*](#), explains that when new programs succeed it’s usually because of the blood, sweat, and tears offered by the staff. “These often-heroic efforts end up as ‘Sandcastles’: they take a lot of effort and look wonderful until the tide of new leadership, new agendas, and new budgets washes them away” (Miller, 2017).

Cognitive Dissonance: When there is a conflict between what is actually going on in the workplace with the person's personal beliefs, it strikes a discourse causing chronic stress. If a teacher does not feel that the school is "walking the walk" according to what they print on their webpage or in the handbooks, then there is [cognitive dissonance](#).

If it says on the school webpage, for example, that all classes offer differentiated instruction and the teacher knows that half of the staff members choose not to do this because "it just takes too much time to design multiple lessons," then there is discourse in what is printed with what is actually practiced within the school.

Work Overload: When the workload is more than the individual can handle or too complex with unreasonable timelines, the amount of work can quickly squash one's enthusiasm.

Insufficient Recognition: Teachers work very hard and when it isn't recognized by administration, students, parents, and/or the community at large, it can be a major cause of burnout. Teachers didn't choose their career because of their salary, so money is not actually a motivational factor. When I looked for reasons people go into teaching, salary was never listed in the Top Ten!

\$54,893 is the median annual Public School Teacher salary in the United States as of Nov. 28, 2017 (salary.com, n.d.). According to the Florida Department of Education, salaries in Florida range from \$34,026.20 (Holmes County) to \$56,868.28 (Monroe) with a state average of \$47,858.26 (Florida Department of Education). Remember, these are the *average salaries*, so the beginning salaries are considerably lower.

So, when teachers spend hours upon hours designing lessons, grading papers, decorating the classroom, etc. and there isn't positive feedback for their hard work, they begin to ask, "Is all this really worth it?"

Feeling of Isolation: Although teaching involves intensive interaction with their students, the majority of the work is done in isolation from their colleagues. With financial cutbacks in administrative help and/or professional development opportunities, many are left on their own to “sink or swim.” In a study lead by Miller McPherson, *Social Isolation in America: Changes in Core Discussion Networks Over Two Decades*, found the number of individuals who felt isolated and had no one with whom to relate within the company, had nearly tripled between 1985 and 2004 (McPherson, 2006).

“Teachers are dead last among all professions [Gallup](#) studied in saying their ‘opinion counts’ at work and their ‘supervisors create an open and trusting environment’” (Gallup, Inc., 2015).

How do we combat burnout?

To reduce stress, one must take care of the body as well as the brain. Exercise, rest, listening to music, working on a hobby, are just a few examples of how to reduce stress. Getting your mind off of your current work gives you a chance to relax and focused on something else.

Remember, when you’re on an airplane and they’re explaining what to do in an emergency, you’re asked to put *your* mask on first in order to assist your child. You must take care of yourself in order to help others. Our teachers can’t help the students if they get burned out and don’t have the desire or energy in their teaching.

Teachers need to feel valued. Above all, they need to feel respected by their students. Developing a strong, positive teacher/student relationship is critical to improving student achievement. (Watch for my article titled, [**What does Research tell us About the Importance of Teacher-Student Relationships?**](#))

There is nothing more rewarding in teaching then when a student reaches that “[aha moment](#)” ... when one has sudden insight or realization of what is

being taught. Teachers need to develop their expertise enabling them to experience more and more of these moments with their students.

[John Hattie](#) in his 800 meta-analyses of educational research, found that the number one factor affecting student achievement was [Collective Teacher Efficacy](#). This is when teachers share the belief that they can reach their common goals and as a team can overcome any challenges they may face. Developing a culture where teachers have time to share ideas and work together, gives staff members the support they need to keep motivated, builds community, and negates the feeling of isolation.

“...Collective efficacy and student achievement were strongly related with an effect size of 1.57.” (Any score over .40 is highly effective in regard to improving student achievement.) “According to the [Visible Learning Research](#) (Hattie, 2012), this is more than double the effect size of feedback (0.75).... It is also greater than three times more likely to influence student achievement than student motivation and concentration, persistence, and engagement (0.48) “ (Donohoo, 2016).

Conclusion:

When teachers report feeling emotionally drained and suffer from stress, have lost their sense of worth, exhibit cynicism, sense professional ineffectiveness or have a feeling of lack of accomplishment, it is obvious that the flame is beginning to burn itself out. There are so many reasons why burnout occurs, but basically, according to [Richard Gunderman, M.D., Ph.D.](#) from Indiana University School of Medicine, burnout is “the accumulation of hundreds or thousands of tiny disappointments, each one hardly noticeable on its own (Gunderman, 2014).”

It's important that teachers are able to discuss with their supervisors their workload, their assignments, and obtain the support and feedback that is necessary in order to feel they are valued and an essential part of the school team. Having time to meet and work closely with their colleagues is one of the

most successful ways not only to improve student achievement (Hattie, 2012) but to have them avoid burnout. Students should provide feedback to the teacher regarding the impact the teacher is making on their lives (Hattie, 2009). Educators need to always feel a sense of purpose. Having them understand that what they do in the classroom is highly valued and extremely important to the future success of each and every student, as well as to the future potential of our society. This will hopefully kindle the flame and keep it ignited.

For comments and/or questions, please don't hesitate to contact me at DrLou@meteoreducation.com

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Brain Junkie

About the Author:

Dr. Lou E Whitaker has a Bachelor of Science in Education from Northern Illinois University, a Masters in Administration from National-Louis University and a Doctorate in Educational Leadership from Nova Southeastern University. Having over 35 years experience in education, she has been a teacher, an assistant principal, a principal, and served as the Associate Superintendent for Schools for the Archdiocese of Milwaukee. She is currently an Educational Consultant for Open Minds Enterprises, EdCenter, Global Center for College & Career Readiness, as well as a consultant for MeTEOR Education.

Chosen as one of Dr. Pat Wolfe's Brainy Bunch Members, she has been involved with Dr. Wolfe's continuous study of the human brain. The Brainy Bunch is a group of educators and health professionals who are passionate about brain development and its impact on learning. On a yearly basis, the group invites two outstanding neuroscientists to meet with them and discuss their latest research developments. Then this renowned group of educators, lead by Dr. Wolfe, translate neurological research into classroom practice. Dr. Whitaker understands the important

of keeping abreast of what is going on in neuroscience as well as understanding the importance of data-driven best practice research. These are essential for making a positive impact on our students' lives.

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