

REDEFINING EDUCATIONAL PRACTICES INTEGRATING INDIAN EPISTEMOLOGY AND MODERN COGNITIVE NEUROSCIENCES

COMPENDIUM OF PAPERS

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Epistemological Concerns of Stress: Relevance to Education

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Abstract

The core of Indian Psychology is adhyatma, - about the self, An analysis of oneself reveals the sources of stress. A person who is going through an extremely stressful situation responds to the situation based on his conditioning. The brain performs better in a positive emotional state. Negative stress impedes learning, memory and performance. The stress reaction begins with the amygdala of brain, Educational practices must be conducive to the promotion of optimum social, cognitive, affective and moral development of children. It is essential that educators minimize stressful events in the classroom and schools should provide a rich curriculum and satisfying experiences to foster sound mental health.

Introduction

Healthy mind leads to healthy citizens, and a developed nation. A mentally healthy person is free from continuous internal conflicts and has the capacity to tolerate frustrations. Having a positive outlook on life and good self-esteem appear to have long-lasting health consequences. Stress is a commonly used word that generally refers to experiences that cause feelings of anxiety and frustration and taxes the ability to successfully cope. It contributes to the physical and behavioral health problems of adolescents and impacts cognitive functioning. Negative stress impedes learning, memory and performance. Exposure to chronic or severe stress can have long-lasting effects on brain structure and function, which can lead to changes in cognition and disorders such as depression. Therefore, teachers should pay attention to the emotions experienced by students, involve parents, take care of the peer climate in the classroom and contribute to school reforms with mental-health-promoting qualities.

Concept of stress and its management in Indian Epistemology

The core of Indian Psychology is adhyatma, - means about the self, particularly aimed at spiritual self-development. An analysis of oneself reveals the sources of stress, and necessitates to free oneself from their effects. Emergence of ego leads to attachment and craving resulting in the experience of anxiety, insecurity and stress.

A person who is going through an extremely stressful situation responds to the situation based on his conditioning called 'Sanskaras'. Bhagavad Gita tries to instill positive 'Sanskaras', so that one can respond positively to the situation. To have a balance one should earn mastery over the senses and mind. Awareness that the pleasure and pain both are passing phases enable us to have mastery over both. The Gita also tells that anger, sensitiveness, pride and ambition are the enemies which are responsible for causing stress in life and we should not let them rule over us. Gita offers ways to lead to happy, healthy and stress free life and can be helpful in stress coping.

There is an integral relation between our sense of identity and the experience of happiness and well-being. Panchakosha is a concept elucidated in Taittiriya Upanishad (TU). Kosha means sheath and they are five in numbers. Accordingly happiness, joy, and well-being are those moments when there is unobstructed manifestation of ananda, which is our original nature. It is the opaqueness of our mental faculties that obstructs the manifestation of ananda.

'Patanjali's astanga yoga furthers integrated development of psychophysical and emotional aspects of individual and the evolution of consciousness. Yogic practices help in improving memory, creativity, self-confidence, and adjustment of adolescent school students. It decreases negative emotions like anxiety, depression, hostility, neuroticism, and stress.

Karma is a very important indigenous construct that has played a significant role in adaptation, adjustment, and coping process. It provides a value-oriented explanation for an individual's life in the physical, economic, social, and spiritual domains. Dukkha or suffering is another Indian concept, in the context of illness, health and stress research. The Indian way of approaching a problem is to go to the very root of the problem by delineating its causes and identifying the underlying processes. Psychological healing may be understood as the experience of an inner sense of well-being, harmony, balance, and peace. It changes the individual to deal effectively. Mental health is a consequence of spiritual practices and worthwhile aim of life.

The Epistemic Role of Emotions

Emotions make essential contributions to cognitive success and thus have positive epistemic value. Emotions help us to remain focused on and attentive to danger, which improves the appraisal of a situation. Apart from knowledge, emotions contribute to understand why something is dangerous and are means to make moral evaluations.

Regions of brain involved in stress perception

The brain decides what is stressful and determines the behavioral and physiological responses. It changes under acute and chronic stress, and directs many systems of the body. The stress reaction begins with the amygdala, an almond shaped structure deep in the brain's emotional center – the limbic system. The amygdala scans incoming signals from the senses for anything that could cause distress. If a threat of any kind is perceived, the amygdala acts like an alarm system, instantaneously sending a message of crisis to all parts of the brain. The sympathetic nervous system releases general stimulants such as noradrenalin into the brain and adrenalin into the body. Prolonged high cortisol levels, seen in chronic stress, result in reduced hippocampal volume and deficits in hippocampal-dependent memory. Acute stress, a more common form of stress, results in the release of adrenal steroids resulting in impaired short-term and working memory.

Meditation may have the ability to strengthen neuronal circuits and enhance the way in which stimuli are processed. Studies have found that

meditation significantly decreases stress related cortisol secretion and may elevate brain-derived neurotrophic factor, which protects neurons against stress and stimulates the production of new neurons. Meditation practice has also been associated with physical changes in brain structure viz increase in cortical thickness and hippocampus volume. Thus meditation practice promotes neural plasticity and experience-dependent cortical plasticity. Being calm turns on more circuits between the feeling and thinking brain, and integrates the right prefrontal lobe's direct responses to emotions with the left prefrontal lobe's ability to regulate these emotions and equips positive behaviour.

Need to create an environment of success in learning

The brain performs better in a positive emotional state. Students must feel physically and emotionally safe before their brains are ready to learn. Teachers can create a positive environment by encouraging and praising their students' efforts. Providing adequate personal space for the student reduces stress, and thus improves memory. When calm, a child is better equipped to behave in positive ways and remembers best. Negative emotions influence learning by affecting students' attention, motivation, use of learning strategies and self-regulation of learning.

Brain-Based Learning in the Classroom

Educational practices must be conducive to the promotion of optimum social, cognitive, affective and moral development of children and prepare them for active participation in societies. Self-confidence provides students with a sense of being able to learn and succeed. The brain learns new information in chunks and works on a time schedule. Students need a moment to "rest their brain" from a task.

Calming Strategies for the Classroom

It is essential that educators minimize stressful events in the classroom as much as possible. Basic needs must be met by providing a safe environment, structure, consistency and positive relationships. Educators can help students manage the stressful moments that inevitably come up in the school setting. Stressful moments can be turned into opportunities to establish self-calming skills. Classic stress-reduction strategies are deep breathing, muscle relaxation, positive images, and positive self-

talk. Mindfulness Based Education Program is a new strategy which includes four key components :1. Quieting the mind,2. Mindful attention 3. Managing negative emotions and negative thinking 4. Acknowledgment of self and others. It evidenced significant improvements in social and emotional competence .

Conclusion

Emotions have important effects on students' learning and achievement. Education should adopt

an interactive bio-psycho-social model. Schools should respect each child as an individual, provide a rich curriculum and satisfying experiences to foster sound mental health. Students can use various methods to encourage positive emotions and reduce negative emotions. Recent findings in Cognitive Neuroscience have important implications for educational theory and practice. An independent discipline, Educational Neuroscience can bridge the gap between neuroscience and educational research.

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