CORRELATES OF EXAMINATION STRESS

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Stress and anxiety are universal human experiences that are intrinsic to human conditions. One learns and acquires knowledge by constantly interacting with the environment. In our modern technological and achievement oriented society stress and anxiety is evoked by social-evaluative situations. Today, test, examinations and evaluative situations have emerged as potent anxiety evoking stimuli in our society that demand our attention for its alleviation. The reason being that its debilitating effects have overpowered its facilitating effects. Stress involves not only the potential stressful events themselves, but also interpretations of them and the individual's response- which may be physiological, cognitive, affective or behavioural. It adversely affects the social, cognitive and academic performance, as well as mental health of a person. Academic stress more among students occurs due to their exposure to huge amounts of information, technological advancement and diversification of modes of learning. They are unable to handle the loads of information and cope with demands and pressures from the environment. Eventually, their performance in academics begins to decrease. Feelings of worry, apprehension, self-preoccupation and bodily tensions begin to surface due to distal and proximal factors. Distal factors may be- the biological makeup, parental expectations and child-rearing practices, observation and modelling of test-anxious behaviour of parents, teachers, siblings and peers and the school and class environment. The proximal factors pertain to the test and task related variables. Stress related to examination is determined by an interplay of both the situational and subjective determinants. It may be expressed through cognitive, affective and behavioural responses of individuals in evaluative situations. Examination stress may have an adverse effect on the physiological and mental well-being of the students. Under highly stressful situations, in an effort to cope with the situation they may experience loss of sleep and appetite, sweating, problems in information processing and memory failure. This may inhibit realization of their true potential.

Theoretical models build a framework to explain the causes of heightened arousal that can be attributed to differences between high and low test-anxious individuals in learning and assessment situations. According to them, too much of drive, deficits in study or test-taking skills or attention, cognitive interference of self-deprecating thoughts, feelings of incompetency or problems in processing of information that are responsible for deficient performance.

The period of class X board examinations is marked by strange reactions from students about how to encounter them. Many of them undergo such extreme pressure that they indulge in acts of self-harm like suicides. Some slip into depression due to building up of inhibitive environment around them, may be due to high expectations of parents, teachers, peers or societal norms. Even the physiological, psychological and emotional changes they experience in the period of their transition from youth to adulthood may evoke confusion and instability of mind in them. The rise of such a phenomenon is a cause of grave concern because nation as a whole is losing that section of population on which rests its future. At such a crucial juncture they have to be taught the skills to overcome stress by improvising upon the ways of learning, processing information and effectively retain and retrieve information when put to test. The application of

learning in problem solving requires a creative approach on the part of students to make use of their existing knowledge. Research has revealed that learning outcomes of students can be made better if they become knowledgeable about their own learning, processing of information such that focus and attention increases, retrieval becomes easy and anxiety due to blockage in memory is lessened. Divergent thinking may also contribute in developing the ability to invent and find solution to the problems in learning and thereby handle the pressure due to exams. The knowledge of performance level as measured by academic achievement may help one to overcome the debilitating effects of examination stress and facilitate preparation for examinations. Even the findings of some studies reviewed reveal existence of relationship between examination stress, learning style, memory, creativity and academic achievement. Besides, it has been a disturbing experience to see the students restrict themselves to traditional confines and examinations oriented learning, in modern times, at a juncture when their learning and cognition is supposed to widen and diversify and creative thinking becomes active. Some of the correlates of examination stress are:-

LEARNING STYLE

Learning styles are the preferred common ways in which people learn. Merrill (2000) says that most students are unaware of their learning styles. Knowledge of one's learning style increases self-awareness about their strengths and weaknesses in learning. It guides one to process acquired information in an effective way such that one's true potential finds expression in the evaluative encounter. Students with the knowledge of their own preferences will be empowered to use various techniques to enhance learning, which may in turn impact overall educational achievement and satisfaction. Dunn, et al. (1995) suggested that for the benefit of their academic achievement, students' learning-style preferences should be matched with compatible educational interventions. Marzano (1998) found that graphic and tactile representations of the subject had noticeable effects on learning outcomes, regardless of any attempt to match them with learner modalities. According to Coffield (2004), all advantages claimed for metacognition (being aware of one's own thought and learning processes) can be gained by encouraging learners to become knowledgeable about their own learning and that of others. It contributes to better learning outcomes. Coffield, Hall & Ecclestone (2004) state that matching students' learning-style preferences with complimentary instruction improves academic achievement and students' attitude towards learning. They involve use of methods of learning that allow an individual optimum learning. If learning is based on understanding and is conceptual, it will boost up one's self-confidence, self-image, let one enjoy the learning process, inspire curiosity and motivate for life-long learning and eventually keep one away from the experience of examination stress. Baijal (2016, 2017) found a positive relationship between examination stress and reproducing learning styles and its dimensions of enactive and figural reproducing learning style.

MEMORY

Memory, the store house of all the information acquired through learning, is an important and indispensable faculty of the brain. It functions not only to store information received as input but it has to retrieve and recall from its enormous storehouse information relevant to the task in hand. If it engages large areas of itself with irrelevant thoughts, worry and anxiety either about self or in evaluative contexts, deficits in learning and retrieval problems may appear and adversely affect academic performance. Sarason, Sarason and Pierce (1995) state that test situations create a sense of threat for those experiencing test anxiety which then disrupts attention and memory functions. According to Eysenck (2001) test anxiety creates irrelevant thought, pre-

occupation and decreases attention and concentration. When attention and concentration are impaired they disrupt memory. Benjamin et al. (1981), Naveh-Benjamin et al. (1987) and Paulman & Kennelly (1984) found that there are test-anxious students who have efficient study skills, but suffer from anxiety blockage and consequently have problems in retrieving information during examinations. These anxious students encode material well enough early during study, budget their time during examinations, and adopt strategies that maximize success on various types of cognitive tasks. Despite this, they do poorly on examinations because they cannot handle the stresses and pressures of evaluative situations. As the examination approaches, they may experience concentration difficulties in their final stages of study due to anxious arousal (Naveh-Benjamin et al., 1987). During the actual exam, they may be unable to recall, organize and express what they learned. According to Paulman & Kennelly (1984) the excessive effort in countering internal cognitive distraction places a limit on processing capability beyond which performance effectiveness falls off rapidly. Test and trait anxiety have been empirically associated with impaired performance in simple memory tasks, including digit span (Mueller, 1977), paired-associate learning (Spence & Spence, 1966) and free recall of word lists (Mueller, 1976). Test anxiety is associated with overall reduced processing on cognitive tasks (Mueller, 1980) and impairs performance on more complex tasks, such as analogical reasoning (Leon & Revelle, 1985).Tobias (1980) suggests that the influence of the effects of test anxiety at the stage of pre-processing and encoding are potentially cumulative, in that information which is not encoded adequately at the pre-processing stage is likely to impose greater difficulty in succeeding information processing. Diversion of attention and cognitive interference in test anxious subjects restricts the amount of input registered and eventually places a burden on the processing mechanisms to figure out and retrieve that proportion of input which has not been effectively registered during evaluative encounters. Tobias (1986) found that higher the reported test anxiety scores, the greater the problems reported in the processing of information Vedhara et al. (2000) revealed that the examination period was associated with an increase in perceived levels of stress, but also a significant reduction in levels of salivary cortisol, compared with the non-examination period. This reduction in cortisol was associated with enhanced short term memory (measured by the total number of words recalled in a free recall test), impaired attention and an impairment in the primary effect (a hippocampal specific index of short term memory) but no significant effect on auditory verbal working memory. It was concluded that cortisol- the stress hormone, can modulate cognitive processes. Sauro (2003) found that relationship between stress, glucocorticoids and memory loss was empirically supported. Oei (2006) found that stress impaired working memory at high loads, but not at low loads. Qin and colleagues (2009) found that psychological stress reduces working memory activity and this was correlated with a hypo activity in the prefrontal cortex. Changes in the neuro-chemistry during the examination period could influence memory in both memory tasks. Denis (2010) found that for females, but not males, increase in cortisol is associated with decreased memory performance. Growing body of research suggests that stress impairs information processing and produces memory deficits in healthy adults (Kirschbaum, Wolf, May, Wippich & Hellhammer, 1996). Baijal (2017) found a negative relationship between examination stress and memory as well as its dimensions of recall memory and process memory. Students with low level of memory were found to experience greater examination stress.

CREATIVITY

Creativity is an ability to bring something new into being by becoming sensitive to gaps in human

knowledge, identifying these deficiencies, searching for their solutions, making guesses as to a potential solution, testing one's hypotheses and communicating the final product (Torrance, 1962). This ability involves making use of existing knowledge to resolve the problem at hand. According to Shanteau & Dino (1993) stress, in some cases, might inhibit creativity. Byron et al. (2010) stated that the relationship between stress and creativity is complex and might not be captured by merely describing the relationship as positive or negative. They found a curvilinear relationship between evaluative stress and creativity such that low evaluative contexts increased creative performance over control conditions, whereas highly evaluative contexts decreased creative performance. Stress reduction through relaxation techniques has been found to increase creative performance. Divergent thinking is positively related to trait and state anxiety. It is a fact that if children are given opportunities to be independent in their early environment, their ability to invent is positively influenced by their experiences. It is likely to contribute to constructivist learning and may be able to moderate examination stress among students. The finding of Belcher and Parisi (1974) supported the proposition of a curvilinear relationship between stress and creativity performance. A possible explanation for a negative association between stress state and creativity is that stress state elicits less material in memory, that it increases cortical arousal, which means fewer active nodes and that it leads to reduction of the attentional focus. Stress state may also promote creativity through increasing task-engagement and motivation to seek solutions. Individuals under state stress may concentrate more during problem-solving strategies resulting in more new and valuable products. Stress reduces the tendency to accept ideas as they come and so it may be linked to more analytical elements of creativity, such as evaluation and systematization. Positive activating states may be linked to 'cognitive flexibility' and facilitate creative performance, even activating states with negative tone may also be creativity-enhancing in terms of 'perseverance.' Passer et al. (2009) suggested the possibility of implementing creative thinking techniques to lessen anxiety because creative thinking is a skill that produces the power of discovery and new thought and also helps to change negative feelings to positive and in return improves mental health when an unpleasant event occurs. Carlson (2002) in a study concluded that creativity provided a defense mechanism to anxiety. Henderson, Rosen and Mascaro (2007) indicated that drawing (creativity stage) provided a calming effcet on post-traumatic stress disorder patients. Potur and Barkul (2010) also suggest that creativity is important in the solution of everyday problems of planning and decision making. Tabrizi, Talib and Yaacob (2011) found a high correlation between creative thinking and anxiety among adolescents. Since creative thinking may help a person reduce anxiety, the school teachers and educational practitioners may help scholars to use creative learning methods to lessen anxiety.

ACADEMIC ACHIEVEMENT

Academic achievement refers to the extent to which a student has been able to achieve his or her short or long term goals. It is commonly measured through examinations or continuous assessment by testing procedural knowledge such as skills or declarative knowledge such as facts. Cumulative GPA, score cards and completion of educational courses such as high school or intermediate represent academic achievement. It is impossible to grow up in modern society without encountering some type of test or examination as the data obtained from it may provide objective and reliable information that directly affects the choices made in the process of vocational guidance and counselling, selection, classification, placement, screening and diagnosis- all of which help shape an individual's upbringing, school and career. When one takes note of the

many uses of tests in our culture and the ways in which they determine the lives of people who take them, it comes as no surprise that examinations may evoke anxiety reactions in many individuals. Hembree (1988) states that test anxiety causes poor performance It relates inversely to students' self-esteem and directly to their fears of negative evaluation, defensiveness and other forms of anxiety. He further says that ability, gender and school grade level give rise to differential test anxiety. Test anxiety is often cited among the factors at play in determining a wide array of unfavourable outcomes and contingencies, including poor cognitive performance, scholastic underachievement, psychological distress and ill-health (Gaudry & Spielberger, 1971; Hembree, 1988; Powers, 1986; Zeidner, 1990). It has often been observed that many students have the ability to do well in examinations, but perform poorly because of their debilitating levels of anxiety. Thus, test anxiety seem to influence academic achievement and may limit educational or vocational development, as test scores and grades influence entrance to many educational or vocational training programmes in modern society. Sohail (2013) found that higher level of stress is associated with poor academic performance. In a study Dawood et al. (2016) revealed statistically significant negative relationship between test anxiety scores and undergraduate nursing students' academic level. Struthers and colleagues, as cited in Petroff 2008, found that stress inversely predicts course grades at the end of the academic year. High stress levels are associated with low academic achievement (Andrews & Wilding, 2004; Chemers et al., 2001).

Thus, academic institutions must build and provide its learners with a constructive learning environment which pronounces active learning by constructing new ideas and building new schemas based upon current as well as past knowledge. A balanced emphasis is required on reproducing and constructive learning style such that information assimilated by students during learning becomes a repository in memory at higher levels and help alleviate the experience of examination stress.

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