

The Impact of Emotions on Students' Cognition

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Abstract

The classroom is an emotional place of students who frequently experience emotions in classroom settings. For example, students can be excited during studying, hope for success, feel pride in their accomplishments, be surprised at discovering a new solution, experience anxiety about failing examinations, feel ashamed over poor grades, or be bored during lessons. In addition, social emotions play a role as well, like admiration, empathy, anger, contempt, or envy concerning peers and teachers. Moreover, students bring emotions to the classroom that concern events outside the school, but can nevertheless have a strong influence upon their learning, such as the emotional turmoil produced by stress within the family (Reinhard Pekrun, International Bureau of Education, 2011).

Key Words: Emotions, Cognition, Cognitive Skills

Cognition

Cognition is a faculty for the processing of information, applying knowledge and changing preferences. Cognition, or cognitive processes, can be natural or artificial, conscious or unconscious. These processes are analyzed from different perspectives within different contexts, notably in the fields of linguistics, anesthesia, neurology and psychiatry, psychology, philosophy, anthropology, systemic and computer science. Within psychology or philosophy, the concept of cognition is closely related to abstract concepts such as mind, intelligence. It encompasses the mental functions, mental processes (thoughts) and states of intelligent entities (humans, collaborative groups, human organizations, highly autonomous machines and artificial intelligences) (<http://en.wikipedia.org/wiki/Cognition>). Cognition is assumed to be a function of the brain, just as breathing is a function of the lungs or blood circulation is a function of the heart. The human brain may well be the most complex structure in the known universe (Sejnowski and Churchland, 1989).

Cognitive Skills

Pascale Michelon (2006) explained that the Cognitive abilities are brain-based skills we need to carry out any task from the simplest to the most complex. They have more to do with the mechanisms of how to learn, remember, problem-solve and pay attention, rather than with any actual knowledge. For instance, answering the telephone involves perception, decision taking, motor skill, language skills; language uses symbols that refer to events displaced in time and space. According to Ronald T. Kellogg (2007) The mental lexicon and grammar of a language are productive, allowing one to generate an infinite number of novel sentences. Social skills and Cognitive

skills are supported by specific neuronal networks. For instance memory skills rely mainly on parts of the temporal lobes and parts of the frontal lobes.

The role of Emotions on Learning

According to International Bureau of Education and International Academy of Education, 2014 elaborate the emotions and its role in Learning Process. All of these emotions can have important effects on student's learning and achievement. Emotions control the students' attention, influence their motivation to learn, modify the choice of learning strategies and affect their self-regulation of learning. Furthermore, emotions are part of students' identify and they affect personality development, psychological health and physical health. From an educational perspective, emotions are important because of their influence on learning and development, but student's emotional wellbeing should also be regarded as an educational goal that is important in itself. Cognitive therapy, as developed by A.T.Beck, is built on the assumption that thinking processes both influence and are influenced by emotional difficulties such as anxiety and depression. Therapy therefore aims to modify thinking processes in an experimental way to see whether this may have a positive effect on the emotions, behavior on understanding problems (Ronald T.Kellogg, 2007).

Importance of Yoga in Schools

The National Council for Teacher Education (NCTE) was established by an Act of Parliament (No. 73 of 1993) with a mandate to achieve planned and co-ordinate development of the teacher education through-out the country for regulation and proper maintenance of norms and standards in the teacher education system and for matter connected therewith. The role of teachers as agents of change promoting understanding and tolerance and improving the quality of education of children cannot be over-emphasized. It necessitates demand for teachers who are professionally competent, responsible and responsive to the need of society, who are enthused with motivation, appropriate knowledge and skills and who display a positive attitude towards life and other people, teachers who have personal characteristics of integrity and a kind of spiritual orientation.

Objectives

1. To find out the Emotional Problems of IX standard students.
2. To improve the Emotional Status through Yoga Practice.
3. To assess the Emotional Status and Academic Achievement in before and after Yoga Practice.
4. To know the relationship between Emotional status and Cognitive Skills.

Hypothesis

- What are the Emotional Problems experienced by the Participants?
- Are there any differences between Emotional Status and Academic Achievement of Participants with Respect to Yoga Practice?
- Is there any relationship between Emotional Status and Cognitive Skills in Post- Assessment of Yoga Intervention?
- Did Emotional strategy enhance Cognitive Skills? If so what level?

In order to fulfill the objectives, the investigator developed and used an Emotional Status Assessment Inventory, and Academic Achievement for this study the investigator has given 120 days Yoga training for 90 selected samples. And this inventory was administrated to a sample of 90 IX standard students belonging to High

School, Dindigul, Tamil Nadu. The experimentation was done among IX standard students of Sourastra Sri Varadharaja High School, Dindigul. The age group of students was 13-14 years, which is pre-adolescent period of life it requires more Nutritional supplementation, Emotional Guidance, and Good strategies to study for getting good marks. Pre and Post assessment was carried out for each variable. The purpose of the study was to find out the relationship between Cognitive Skills, and Emotional Status. For this study the investigator selected an innovative strategy is “systematic Yoga training”. For the purpose of analysis, the research work has been organized under the following sections:

1. Descriptive Analysis - Percentage Analysis
2. Differential Analysis - ‘t’ Test
3. Correlation Analysis – Calculating of “r”

DESCRIPTIVE ANALYSIS ON EMOTIONAL STATUS OF PARTICIPANTS

Ho: What are the Emotional Problems experienced by the Participants?

Table – 01.
Emotional Problems of Participants

S.No	Emotional Problems	Number (N=90)	Percentage
1.	Bullying other children	29	32%
2.	Nail Biting	60	66%
3.	Crying	49	54.4%
4.	Shy	25	28%
5.	Inactive	33	37%
6.	Prone to disease	29	32%
7.	Withdrawn	40	44.4%
8.	Stammering	19	21.1%
9.	Violent	33	37%
10.	Absenteeism	50	55.6%
11.	Fear about Teacher	20	22.2%
12.	Hate school	24	26.7%
13.	No Friendship	31	34.4%
14.	Never help others	33	36.7 %
15.	Unwilling to Play	31	34.4%

The above table showed that emotional problems of the students, 66% have the problem of Nail biting, 56% of students Absentee, 32% bully other children and Prone to disease, 54% of the students used to Cry in the class, 28% of them feel Shy and 44% of them were withdrawn, other emotional problems like being Violent and Inactive by 37% and 22% fear about teacher Stammering and 21% having, 26% of hate school environment and also 34% of students have no friendship with others and unwilling to play in school 34% of the students never help others in their classroom.

INFERENCE ANALYSIS OF EMOTIONAL INTERVENTION

Ho: Is there any differences between Emotional Status and Academic Achievement of Participants with Respect to Yoga Practice?

Table – 02.

Paired ‘t’ test for Pre and Post Assessment of Emotional Status and Academic Achievement in before and after Yoga Practice

Variables		Pre Assessment	Post Assessment	‘t’ Value	‘p’ value	Effect Size
Emotional Status	Mean	13.68	22.65	18.65	.000	.92
	SD	(1.64)	(1.87)			
Academic Achievement	Mean	45.19	67.00	13.46	.000	.86
	SD	(7.94)	(9.72)			

It is noted that the calculated value 18.65 is significant at .01 level of significance. Hence it is concluded that there is significant difference between pre – assessment and post – assessment on Emotional Status of IX standard students. Result indicate a significant improvement in Emotional status of IX standard students through Yoga Practice, posttest ($M= 22.65, SD=1.87$) than pre-test ($M=13.68, SD= 1.64$), $t(30) = 18.65, p=.000$.

It is noted that the calculated value 13.46 is significant at .01 level of significance. Hence it is concluded that there is significant difference between pre – assessment and post – assessment on Academic Achievement of IX standard students. Result indicate a significant improvement in Academic Achievement of IX standard students through Yoga Practice, posttest ($M= 67.00, SD=9.72$) than pre-test ($M=45.19, SD= 7.94$), $t(30) = 13.46, p=.000$.

Ho: Is there any relationship between Emotional Status and Cognitive Skills in Post- Assessment of Yoga Intervention?

Table – 03.

'r' Value Showing Correlation between Emotional status and Cognitive Skills in Post Assessment

Cognitive Skills	Yoga Practice r-Value	Significance
Verbal Fluency Skill	.722**	S
Sustained Attention	.778**	S
Design Fluency	.595**	S
Verbal Working Memory	.457**	S
VisuoSpacial Working Memory	.207	S
Perceptual Ability	.362*	S
Auditory Verbal Learning	.283	S
Visual Learning and Memory	.641**	S

The co-efficient of correlation obtained between Academic Achievement and Emotional Status is .722**, which is Greater than the table value at 0.01 level of significance, hence it is concluded that there is a strong positive relationship of Emotional Status on Academic Achievement. From the above table it is noted that the calculated 'r' Value is .778** which is Greater than the table value at 0.01 level of significance, hence it is concluded that there is a strong relationship of Emotional Status on Verbal Fluency Skill.

The co-efficient of correlation obtained between Sustained Attention and Emotional Status is .595**, which is Greater than the table 'r' value at 0.01 levels. Hence there is a strong significant correlation between Emotional Status and sustained attention. It is inferred from the table that co-efficient of correlation obtained between Emotional Status and Design Fluency is .595**, which is Greater than table value at 0.01 level. Hence, there is a relationship between Emotional Status and Design Fluency Skill in post- test.

Results in the table shows that the co-efficient of correlation obtained between Emotional Status and Verbal Working Memory is .457**, which is greater than table value at 0.01 levels. Hence, there is a positive correlation between Emotional Status and Verbal Working Memory in post test. It is appears from the table that the co-efficient of correlation obtained between Emotional Status and Visuo-spacial Working Memory is .207, which is less than table value at 0.01 level. Hence, there is no significant relationship between Visuospatial Working Memory and Emotional Status in.

Results in the table showed that co-efficient of correlation between Emotional Status and Visual Perceptual Ability is .362* which is greater than table Value at the 0.05 level. Hence, there is a relationship between Visual Perceptual Ability and Emotional Status. From the above table, it can be seen that the co-efficient of correlation

obtained between Emotional Status and Auditory Verbal Learning is .283, which is less than table value at 0.01 level. Hence, there is no significant relationship between Auditory Verbal Learning and Emotional Status.

It appears from the table that the co-efficient of correlation obtained between Emotional Status and Verbal Learning and memory is .641**, which is Greater than table value at 0.01 level. Hence, there is a positive relationship between Verbal Learning memory and Emotional Status.

Conclusion

1. **The Emotional Problems of the Participants:** 66% have the problem of Nail biting, 56% of students Absentee, 32% bully other children and Prone to disease, 54% of the students used to Cry in the class, 28% of them feel Shy and 44% of them were withdrawn, other emotional problems like being Violent and Inactive by 37% and 22% fear about teacher Stammering and 21% having, 26% of hate school environment and also 34% of students have no friendship with others and unwilling to play in school 34% of the students never help others in their classroom.

Emotional Strategy Intervention:

1. Result indicate a significant improvement in Emotional status of IX standard students through Yoga Practice, posttest ($M= 22.65, SD=1.87$) than pre-test ($M=13.68, SD= 1.64$), $t(30) =18.65, p=.000$.
2. Result indicate a significant improvement in Academic Achievement of IX standard students through Yoga Practice, posttest ($M= 67.00, SD=9.72$) than pre-test ($M=45.19, SD= 7.94$), $t(30) =13.46, p=.000$.
3. Result indicate a significant improvement in Verbal Fluency Skill of IX standard students through Yoga Practice, posttest ($M= 20.81, SD=2.83$) than pre - test ($M=12..90, SD= 2.80$), $t(30) = 12.19, p=.000$.
4. Result indicate a significant improvement in Sustained Skill Skill of IX standard students through Yoga Practice, posttest ($M= 39.29, SD= 5.34$) than pre – test ($M= 34.90, SD= 7.24$), $t(30) = 2.91, p=.000$.
5. Result indicate a significant improvement in Design Fluency Skill of IX standard students through Yoga Practice, posttest ($M= 9.00, SD= 1.93$) than pre-test($M= 3.87, SD=1.56$), $t(30) = 12.38, p=.000$.
6. Result indicate a significant improvement in Verbal Working Memory Skill of IX standard students through Yoga Practice, posttest ($M= 12.19, SD=3.12$) than pre-test ($M= 10.48, SD= 2.82$), $t(30) = 5.20, p=.000$.
7. Result indicate a significant improvement in Visuo-spacial Working Memory of IX standard students through Yoga Practice, posttest($M= 8.45, SD= 1.89$) than pre-test ($M = 7.52, SD= 1.45$), $t(30) = 3.51, p=.000$.

8. Result indicate a significant improvement Visuo -Perceptual Ability of IX standard students through Yoga Practice, posttest ($M= 22.71, SD= 5.24$) than pre-test ($M= 21.58, SD= 4.02$), $t(30) = 2.45, p=.000$.
9. Result indicate a significant improvement Auditory Verbal Learning of IX standard students through Yoga Practice, posttest ($M=11. 26, SD= 2.50$) than pre-test ($M=6.74, SD= 1.80$), $t(30) = 7.77, p=.000$.
10. Result indicate a significant improvement Visual Learning and Memory of IX standard students through Yoga Practice, posttest ($M=12.42, SD= 2.15$) than pre-test ($M= 7.48, SD= 1.67$), $t(30) = 11.10, p=.000$.

The Correlation between Emotional Status and Cognitive Skills

1. The co- efficient of correlation obtained between Academic Achievement and Emotional Status is $.722^{**}$, hence it is concluded that there is a strong positive relationship of Emotional Status on Academic Achievement.
2. The calculated 'r' Value of Verbal Fluency Skill is $.778^{**}$ hence it is concluded that there is a strong relationship between Emotional Status Verbal Fluency Skill.
3. The co – efficient of correlation obtained between Sustained Attention and Emotional Status is $.595^{**}$. Hence there is a strong significant correlation between Emotional Status and sustained attention.
4. It is inferred that co-efficient of correlation obtained between Emotional Status and Design Fluency is $.595^{**}$. Hence, there is a relationship between Emotional Status and Design Fluency Skill in post- test.
5. Results in the table shows that the co-efficient of correlation obtained between Emotional Status and Verbal Working Memory is $.457^{**}$. Hence, there is a positive correlation between Emotional Status and Verbal Working Memory in post -test.
6. It is appears from the table that the co- efficient of correlation obtained between Emotional Status and Visuo-spacial Working Memory is $.207$. Hence, there is no significant relationship between Visuo-spacial Working Memory and Emotional Status.
7. Results in the table showed that co-efficient of correlation between Emotional Status and Visual Perceptual Ability is $.362^{*}$. Hence, there is a relationship between Visual Perceptual Ability and Emotional Status.
8. The co-efficient of correlation obtained between Emotional Status and Auditory Verbal Learning is $.283$. Hence, there is no significant relationship between Auditory Verbal Learning and Emotional Status.
9. The co-efficient of correlation obtained between Emotional Status and Verbal Learning and memory is $.641^{**}$. Hence, there is a positive relationship between Verbal Learning memory and Emotional Status.

Educational Implications of the Research

This research study proved that the Academic achievement can be improved through improving the Emotional Status of the students. In order to improve emotional status, teacher should give more positive feedback. Punishment and negative feedback increased emotional problems of the students. So teacher has to reduce the negative emotional problems. Teachers and parents involve in the educational process. Education must be knowledge oriented and need based. The curriculum and curricular activities may be structured in such way to suit the poor achievers to improve the academic achievement. The school may be advised to conduct extra classes for academically low students. Parents should create a conducive environment in their home so that the student may develop better mental health and concentrate more in their studies which makes good performance in their academic achievement.

Conclusion

“The destiny of the nation should be shaped in the classroom” Kothari Commission. Therefore the empirical measurement of Cognitive Skills and attempt to improve through innovative strategies is very good shining of future education system. The present study also has shown that the purpose of education is to form good Emotional Status, better health to prepare and produce a sound mind in a sound body. The classroom plays significant role in the educational research. This research is focused the importance on how the emotional status, Nutritional status and Metacognitive knowledge of the students affect their Cognitive Skills as well as academic achievement of the students in their daily performance.

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