

Effectiveness of Yoga on Memory of Learners in Secondary Level

Anthony N V, K B Jasmine Suthanthira Devi

Abstract: *This experimental research is evaluated the significance of Yoga on Memory of Secondary School Students, aged between 13 and 17 years. Pretest-posttest of control and experimental groups are designed for this study. The total seventy students were included equally in both control and experimental groups. Before the experiment the researcher administered a pre-test for measuring memory of the total seventy students which was measured through in terms of number of trials using Instructional Manual for Memory Drum (Dr. Vivek Bhargava, Chairman, Harprasad Institute of Behavioural Studies, 41-12, Hardeep Enclave, Sikandra. AGRA(U.P.). And the same test was administered as post –test for both groups. The significance was measured through in terms of number of trials. To remove the difference statistically in the initial status of the two groups, the researcher analyzed the data with the statistical technique of Analysis of Covariance (ANCOVA). Thus both groups initial status had been equated. The main findings of the experimental study proved that the regular yoga practicing students develop the homeostasis of persons in a balanced manner. It helps to attain the complete self-realization. This study reveals that Yoga will assist to improve the students’ memory in a magnificent level. So, Yoga should be practiced for students in the schools of Kerala. Through yoga the students’ memory has increased.*

Keywords: *Memory, Yoga So, Yoga should be practiced for students in the schools of Kerala.*

I. INTRODUCTION

Life at the early stage was set apart for education intended to acquire the concept of ‘dharana’. Here, dharana is the truth which is translated into action. It is originated from the root 'dhar' , which means permanent. The truth realized through cognition is known as 'jnana', and jnana translated into life through action is known as dharana. So it has to be realized that jnana and dharana are two sides of same coin, the satya (truth), attention (sradha) and concentration (dharana) help to attain Memory (smarana). So, education in ancient India was mainly concentrated on the acquisition of dharana.

The brahmachari or the student would start yoga training under the guru(teacher). The training is included physical purity, practicing asanas and pranayama. The harmonious blending of the body, mind and intellect direct a person to his deeper consciousness or soul. Realising the soul was the ultimate reality of education.

Memory means “to be mindful” or “ to remember”. It is the function that involves retrieving the past experiences, perceptions, emotions, thought and actions. Yoga is an ancient Indian tradition in which through diverse physical and mental practice, the practitioner tries to achieve a state of all-round personality development.

Revised Manuscript Received on January 15, 2020

Anthony N V, Assistant Professor, Department Master of Science, Thejus Engineering College, Vellarkad, Thrissur, Kerala, India.

Dr.K.B. Jasmine Suthanthira Devi, Dean Department of Education At PRIST Deemed To Be University, Thanjavur Campus. Tamilnadu, India.

'Ignorance' the cause of manifoldness can be removed and attained the union with Supreme Self by the method of practicing yoga (Pavithrananda Swami, 1994). A study on 'Role of yoga in attention, concentration' proved that it was statistically improved the Medical students’ attention, concentration and memory of the yoga practiced group ($P < 0.001$) when they were examined with the control group.(Sheelajoice P P,Khaleel Ahmed Manic,Sudheer P K,2018). Another research study was "effectiveness of yoga on concentration and memory in relation to stress". It gave clear evidence that the yoga practiced students attained higher concentration and performed better short-term memory (Amit Kauts, 2018).

Yogaasanas, pranayama, relaxation and meditation stimulate endocrine glands and nervous system, which control and co-ordinate our whole systems of the body. Through yoga we get the physical and mental benefits. The king of asana, headstand (Sirshasan) is a panacea for human illness. It gives an increased memory and intellectual capacity and provides strong power of attention and concentration to students. In 'Yoga Tantra Upanishad' has quoted that those who practise headstand for three hours regularly per day will win over the time.

II. NEED AND SIGNIFICANCE OF THE STUDY

The total development of the personality of the individual is the main aim of education. This means an integrated development of the cognitive, affective and psychomotor domains. The development is achieved through constructivism. It recognises the construction of new understanding as a combination of prior learning, new information and readiness to learn. The individual makes choice what new ideas to accept and how to fit them into their established views of the world. Constructivism has been labeled as the philosophy of learning that proposes learner's need to build their own understanding of new ideas. So, it has to be understood that education is not memorizing some knowledge or developing some skills, but the achievement of the ultimate values of truth, beauty, and goodness.

Yoga practice strengthens the mind and body. Although it is initiated in India, it is more popularized in the United States (Finnan ,2015). Eight steps of yoga are indicated to refine the body and mind (Sivananda Yoga Vedanta Center,2010). The function of antakarana (mind) that we take first a look at the object, this information via retina of the eye is carried through the optic nerve to the brain, it is taken up by the mind (manas). If we looked up from a distance, it will extremely difficult to decide what the object is. Mind(manas) now starts thinking and doubting, whether the object is a flower or a piece of paper, etc.

In order to reach a proper conclusion about the nature of the object, it must be analyzed further. So we use intellect (Budhi), but the intellect cannot directly come to any final conclusion without the first inquiring and comparing with the submerged experiences lying within the subconscious mind. In this way intellect comes to a conclusion of all sensual experience. "Yogah chitta vriti nirodha". (PYS ch 1,su-2).

Yoga is a slow-gradual process of bringing the mind and all its activities to a state of stillness.

When the mind become still, pure consciousness and pure energy unite and become one leading to knowledge of the self (scriptural definition). Yogic approach to education in which students are given training in keeping the mind and body pure and healthy will go a long way in solving the problem of education.

III. OBJECTIVES OF THE STUDY

To test the Effectiveness of Yoga on Memory of secondary school students.

IV. HYPOTHESIS OF THE STUDY

Yoga is effective for developing the Memory of secondary school students.

V. METHODOLOGY

So as to find out the Effectiveness of Yoga on Memory of secondary school students, the researcher selected the experimental group design.

VI. SAMPLING & SAMPLING TECHNIQUE

In the present study, a heterogeneous group of 70 students (35 in experimental group and 35 in control group), aged 13-17 years, studying in the secondary school of Government Higher Secondary School, Marathencode, Kerala (India) were selected through purposive sampling and experimental design of pre and post test was used.

VII. PROCEDURE

The aim of the research is to prove whether yoga is effective for developing Memory of the secondary school students, aged between 13 to 17 years. The sample size of both experimental and control groups were 35 in each. Before beginning the experiment, the researcher conducted pre- test for measuring memory of total seventy students (experimental & control groups), which was measured in terms of number of trials. After given one month yoga practice (50 minutes per day) for experimental group, post-tests were conducted to both experimental and control groups and also measured the memory. Effectiveness of yoga on memory of students' was measured in terms of number of trials before and after the experiment. The data was analysed by using the statistical technique, Analysis of Covariance (ANCOVA). Thus the difference in the initial status of the two groups could be removed statistically. So that they could be compared as though their initial status had been equated.

VIII. STATISTICAL ANALYSIS & RESULTS

The explanation of the results and the way of explaining were done objective-wise. See the results in the following table.

Table 1: The results showing the significant difference in the memory before and after the experiment.

	Group	N	Mean	Std. Deviation	CR	P Value
Pre-test	Experimental	35	24.7429	13.15595	.848	.400
	Control	35	22.5143	8.29377		
Post-test	Experimental	35	4.6000	2.04652	6.25	.000
	Control	35	12.2571	6.94238		

As the obtained value is less than the table value 1.96 at 0.05 level of significance, the Critical Ratio 0.848 is not significant. So the students of the experimental and control groups do not differ significantly in their memory before the experiment. And the researcher could arrive at a judgment before the experiment both groups had the same level of memory.

The calculated value 6.25 is greater than the table value 1.96 at 0.05 level of significance. So in the case of post-test the experimental and control groups scores were differed significantly. The obtained means score of experimental group 4.60 is less than the mean score of control group 12.25. So, it is understood that the students in Experimental group has taken less time to memorize the concept than the control group.

The researcher computed the total sum of squares of Adjustment Mean Square Variance for the post-test and also calculated the 'F' ratio. Finally 'Y' scores were put right the difference from the initial 'X' scores. For any variability in Y, gave in order to help achieve by X has adjusted for that the SSy. The adjusted sum of squares for Y(SSy) and F-ratio were computed and calculated respectively. The pre-test and post-test scores of experimental and control group of students tabulated by using ANCOVA.

Table 2. The significant difference in the yoga practice for Memory of Secondary School Students has described by using ANCOVA.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Memory	19.825	1	19.825	.754	.388
Group	1044.552	1	1044.552	39.736	.000
Error	1761.260	67	26.287		
Total	7780.000	70			

To find the significant difference in the yoga practice for memory was tested by the calculated value. So as the table value of F for df67 is 7.08 at 0.01 level, the obtained Fy.x ratio is significant (Fy.x =39.73; p < 0.01). The two final means depended upon the experimental and control groups differed significantly after they have been adjusted for initial differences on X.



So the researcher could arrive at a judgement that both groups differed significantly. The results of the adjusted mean score revealed the exact difference.

A. Comparison of Adjusted Means

The computing of The Adjustment Means of post test scores (Y means) of students in both groups were done successfully and tested the significant difference between the adjusted Y means. The data of Adjusted Means of post-tests of students in both experimental and control groups were tabulated.

Table 3. Tabulated scores of Adjusted Means of pre-post tests of students in control and experimental groups.

Groups	N	Mx	My	My.x (Adjusted)	Mean difference	SEm	t	Level of Significance
Experimental	35	24.74	4.60	4.54	7.76	4.60	6.30	P<0.05
Control	35	22.5	12.25	12.32				

From Table 't' for df 134 (Total), $t_{0.05}=1.98$ and $t_{0.01}=2.66$

The significance was tested by Adjusted Y means for the post-test scores. 2.66 at 0.01 level and 2.00 at 0.05 level are the table values of t with df70. 6.30 is the calculated value of 't'. So the table value is lesser than the calculated 't' value. It is significant at 0.01 level ($t= 6.30$; $p<0.01$). The expressive disagreement between the adjusted Y Means denotes that the students in the experimental and control groups vary significantly in their performance in the post-test. So the Adjusted Means of experimental group is significantly different than that of the control group. The experimental group is greater than the control group in the Memory test. Thus the Hypothesis is accepted and it is significant. Therefore, it may be closed out that the yoga practiced students have better memory skills than those taught by Activity Oriented Method. So it can be calculated that yoga strategy is effective for developing memory.

IX. FINDINGS OF THE STUDY

Yoga is a way of an integrated system of education and it is about balancing mind, body and spirit. The perfect balance is that the relationship with the Divine is restored. When yoga is practiced, the body make steady and comfortable and also control the mental modes. In order to gain the power of attention, concentration and memory it should be withdrawn from sense (prathyahara by Patanjali). The experimental study discovered that the yoga will help to improve students' memory showing exceptional knowledge in outstretch. Through yoga the students have increased their memory.

X. IMPLICATIONS OF THE STUDY

Many studies have focused on that attention, concentration and memory. The memory can be increased to yoga practicing students during their course of the study in schools. Yoga is very effective for the students those who having distraction, attention deficit hyperactivity disorder (ADHD), poor attention span and lack of memory. It helps to process sensory information at the thalamic level (Tells [et.al.](#),1992). Stretching and aerobic exercise (yogasana & pranayama) is essential to maintaining a

stimulating internal environments of the body which in turn helps to improve and maintain cognitive function (Krueger, [et.al.](#),2002).

Dropping out of school students, due to the lack of attention, concentration, memory, learning interest and industriousness can also be diminished. Using yoga in the classroom certainly influence how one teaches and what is learnt. Quality in education should assimilate the ability of coping with change. Yoga enriches the efficiency to deal with make different and creating new possibilities in classroom. Yoga exercise is implicated into the learning process itself, assisting students to keep fresh, relaxed throughout the day. It reduces the stress level of both the teachers and students. So, the educational authority should take necessary action to implement yoga as the integral part of school curriculum for secondary school students.

XI. DISCUSSION

The present study reveals that yoga will assist to improve students' memory in a magnificent level. In the case of post-test, the experimental and control group scores were differed significantly. In other study, a comparative study of three different yoga modules on logical memory of school children by Patra, B (2005) showed the significant improvement in logical memory. In the investigation, efficacy of three different modules on verbal memory in school students by Pushpavati, P R (2004) proved significance improvements on verbal memory in 300 school children of both male and female, aged 13-16 years. In another study, 'immediate effect of kapalapati (pumping) on verbal memory and spatial memory in children' by Ashutosh Mishra, A (2007) revealed that there was a significant improvement in verbal memory but not in spatial memory. In earlier study of Manjunath, (2004) showed significant improvement in spatial memory task following ten days of yoga programme and specific yoga nostril breathing on children. There were enough successful studies on verbal memory, visual memory, logical memory, and associated memory.

XII. CONCLUSION

This experimental study suggested that daily Yoga practice in school for a short duration helps to improve or develop attention, concentration and memory of the secondary school students. The authors suggested that yoga is one of the best strategies for improving memory and academic excellence. The use of yoga techniques can be expanded among secondary school and college students also. Yoga training was helped to improve the mutual well being of the students and teachers and also to foster the learning and creativity. Yoga could influence to significantly develop memory of the students, and to nurture confidence and creativity.

REFERENCES

1. Anthony, N V(2009). Effectiveness of Yoga and Meditation in Developing Concentration in Secondary School Students. Dissertation for M.Ed. Department of Education, University of Calicut.
2. Amit Kauts and Neelam Sharma, (2009). Effectiveness of Yoga on Academic performance in relation to Stress. Int. J.Yoga. 2009 Jan-June;2(1):39-43

3. Tells, S et.al., (2008). Yoga & Memory: Bangalore: Swami Vivekananda Yoga Prakashna.
4. Joshi, M et.al., (2008). Immediate effects of Right and Left nostrils breathing on Verbal and Spatial Scores. Indian journal of physiology and pharmacology, 52(2): 197 – 200
5. Mishra, A (2007). A Comparative Study of Three different Yoga Modules on Associate Memory of School Children. Master's Dissertation, Svyasa University, Bangalore
6. Shatrughan, (2005). Efficacy of Three Modules of Yoga on Visual Memory of Children. M.Sc dissertation. Swami Vivekananda Yoga Anusandhana Samsthana. Bangalore
7. Patra, B (2005). A Comparative Study of three different Modules on Logical Memory of School Children. Master's Dissertation. Svyasa University. Bangalore
8. Pushpavathi, P R (2004). Efficacy of Three different Modules in Verbal Memory of School Children. Master's Dissertation. Department of Yogic science & research, Svyasa University. Bangalore.
9. Kesavan, PM (2004). Attention and Concentration after Yoga practice in Normal Healthy Adults and Students. Master's Dissertation. Department of Yogic science & research, Svyasa University. Bangalore.
10. Naveen (1997). Yoga & Memory. VK Yoga Publication. Bangalore.
11. Sivananda, S (1991). The Sivananda Yoga Training Manual: Published by the Sivananda Yoga Vedananda Centre 243, West 24th Street, New York, NY 10011. USA
12. <http://www.yoga.life.com>
13. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3017967>, Wolter Kluwers, Medknow Publications
14. TRANS, Asian Research Journal, <http://www.tarj.in>
15. <http://shodhganga.inflibnet.ac.in>

AUTHORS PROFILE



Anthony N V, M.A., M.Sc., M.Ed., Diploma in Yoga (International Sivananda Yoga Vedanata Research Centre). Worked at higher secondary schools and educational training colleges as Psychology teacher in different parts of Kerala. Presently working as Assistant Professor and Students Counsellor at Thejus Engineering College, Vellarkad, Thrissur, affiliated to the University of Calicut and APJ Abdul Kalam Technological University, Kerala.



Dr. K.B. Jasmine Suthanthira Devi, is the Dean as well as the Head of the Department of Education at PRIST Deemed to be University, Thanjavur Campus. She has conducted and participated in many workshops, seminars, conferences at various levels, and guided Ph.D, M.Phil and M.Ed students. She has also been external examiner for Ph.D viva voce examination. She has published half a dozen books and a number of academic papers in various national and international journals.