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Effectiveness of Yoga on Academic Achievement of Secondary School Students

Anthony N. V[1], Dr. K B Jasmine Suthanthira Devi[2*]

[1]*Research Scholar, Ponnaiyah Ramajayam Institute of Science and Technology University, Deemed to be University, Thanjavur, TamilNadu*
[2]*Professor, School of Education, Ponnaiyah Ramajayam Institute of Science and Technology University, Deemed to be University, Thanjavur, TamilNadu*
Corresponding author: jasmineprist@gmail.com

Abstract

The current work was to identify the efficiency of yoga on achievement in biology of secondary school students, aged 13-17 years. The study was designed in experimental method with pre-, post-test of control as well as experimental groups. A number of students in each group was 35. Before beginning this study, the total 70 students of the control and experimental group were assessed the test scores in biology by using standardized academic achievement test (SAAT), developed by the researcher along with the supervising teacher in the year September 2019. The same test (SAAT) was assessed as post-test for two categories. Statistical techniques of preliminary and mean difference analysis were used. The result revealed 2 groups differed pointedly in an academic accomplishment in biology based on the scores. To eliminate the alteration statistical in an starting phase of 2 groups, the investigator analysed the information by the statistical techniques of Analysis of Covariance (ANCOVA). From this study, the researcher concluded that yoga is a discipline to develop the efficiency to learn the subject more. By practising yoga students have increased the academic achievement.

Keywords: Academic Achievement, ANCOVA, Effect, Students, Yoga

I. Introduction

Yoga is a way of transforming the brain including its activity to a condition of stillness over time. Pure awareness and pure energy join and then become a when the mind is silent, associated with self – "Yogah chitta vritti nirodha" (PYS Ch. 1, Su. 2). *Chitta*, not limited to the mind. It is the source of the consciousness of an individual. *Vritti* makes disturbances in the conscious level of an individual. So *vritti* blocks us from self-realisation of *chitta*. Here yoga is remedy to avoid all the disturbances of the mind.

In the modern education, yoga plays an important role to fill the space which is essentially left-brain oriented. Swami Vivekananda said that "Education is not information gathering and bread-earning, but it is the manifestation of perfection already exists in man". According to Jawaharlal Nehru, "Education is what remains with individual after he/she left has forgotten the subject matter taught in the classroom". The goal of education is building the overall development of the personality – physical, mental, emotional and intellectual – with a spiritual basis. One should also have the sense of loyalty, devotion, spiritual urge, service mind and civic sense. The scientific research centres of yoga have developed practices to transform the sense of this vision into action.

There were 4 ways of yoga: *jnana-*, *raja-*, *bhakthi-*, and *karma-yoga* which are yoga of knowledge, mind control, devotion, action

and selfless service respectively. *Raja yoga* is classified into eight limbs (divisions). Each of the limbs contributes values in education. The eight limbs of the *raja yoga* are: *yama, asana, niyama, dharana, pranayama, dhyana, pratyahara* and *samadhi*. By practising yoga one can attain the following values: non-violence, truthfulness, chastity, non-stealing, non-accepting gifts, purity (external and internal), contentment, austerity, study of religious scripts, worship of God, withdrawal of senses from other objects, and avoiding unnecessary thoughts, etc.

Stressors like interpersonal conflicts with teacher, peer group, family and friends in the twenty-first century, make students struggle to achieve academically (Riyan-Wenger et al., 2005). Many other research propose that stressors might result to mood disorder and another psychological disturbance (Carter et al., 2006; Grant et al., 2009; Roberts et al., 2009). According to the study findings, students have to develop social emotional competence and cognitive powers for academic achievement.

School authorities and government should play an important role in assisting students to establish healthy lifestyle behaviours from the childhood. Implementing yoga in schools will have unlimited advantages not only to the students, families but also to the society as whole. So it is necessary to promote yoga-based education in schools.

II. Requirement and Implication of the Work

Academic achievement of students based on internal and external abilities. Both internal and external abilities are strengthened by practicing yoga. The various skills are required for the new generation as it is vibrant and challenging to meet the future needs of twenty first century. The required skills include: administration, management, planning, execution, oratory, technical abilities, rapport building, sound memory, flexibility, swiftness, bubbling enthusiasm to work hard, optimism, working according to foresight, artistic skills, creativity, research-oriented skills, reasoning, logic, common sense, arithmetic skills, effective communication, organising capacity, team spirit, and scientific approach.

This talent is traditionally thought as advanced through remaining comfortable in an inside happiness of silent consciousness (vivekananda). Yogical practises lead to inside bliss as well as assist one to stay energised and relaxation. Because the aware self was all powerful and lively, one might use pure awareness to develop a variety of cognitive capacities for the greater good (chinmayananda).

Yoga is effective for enhancing on memory, expressive capability and academic attainment of secondary students. Thereby academic achievement can be enhanced. Memory is very important for academic achievement. Emotional competence can develop attention and concentration which will enhance memory. It is evident that yoga is an unavoidable routine in the life of the students. Yoga practise in school for a brief period of time can assist secondary students to enhance or increase their focus, attention, memory, emotional competence, and educational success.

III. Definition of Key Terms

Academic accomplishment: Crow and Crow (1969) defined Academic accomplishment as "the degree to which a learner benefits from teaching in a particular subject." The extent from which a user's skill of knowledge has already been developed it through training he has received is a measure of success". In our work Academic accomplishment denotes the value attained in the Standardised Achievement Test in Biology conducted in Secondary students.

Yoga: 'Yoga Chitta Vritti Nirodha [PYS, Ch1, Su-2]. Yoga, sluggish, regular way of carrying the brain as well as its events to a state of immobility. Pure awareness and purest energy combine and become one when the brain becomes quiet, due to self. [Scripturally defined]

IV. Purposes of the work

To find out the efficiency of yoga on academic accomplishment of secondary school students in Biology.

V. Premise of the Study

Yoga was not active for improving the academic achievement of secondary school students in Biology.

VI. Methods

The researcher selected the experimental method which consists of experimental as well as control group, pre- and post-test design to identify the Efficiency of Yoga on accomplishment of secondary school students in Biology.

VII. Sampling and Sampling Method

In this experimental study, a heterogeneous individual of 70 students (35:35 in both experimental as well as control group), aged 13-17 yrs, perusing in 9th standard of Government Higher Secondary School– Thrissur, Kerala, was chosen via purposive sample technique.

VIII. The Method

The goal of our work was to demonstrate whether yoga was actual for improving the academic achievement of secondary school students, aged 13-17 years. The specimen shape of both experimental as well as control group is 35 in each. A standardized academic achievement test (SAAT) in biology developed by the researcher along with the supervising teacher in the year September 2019 was utilized to evaluate the accomplishment of school students. The SAAT paper consisted of 35 items were given to both experimental as well as control group students before starting research. Only the experimental group was given yoga training. After that the scores of both the groups were again measured. The values of pre- and post-test were analysed and compared. Analysis of Covariance was used to examine the data (ANCOVA). The disparity in the two groups' original status might be mathematically erased, allowing them to be evaluated as if they were of equal project outset.

IX. Statistical Study and Result

The presentation of outcomes and its evaluation were completed objective-wise. The values were depicted in the below table:

Table 1: Results display important variance in academic achievement before and after the study

Group	Number of Students	Mean	Standard Deviation	Critical Ratio	P Value
Experimental	35	29.63	12.245	0.900	P>0.01
Control	35	27.34	8.718		
Experimental	35	54.51	12.370	11.69	P>0.01
Control	35	25.23	8.160		

So because attempts to obtain ratio 0.900 is less than the table value of 2.58 at the significant level of 0.01, it is not relevant. It is obvious therefore pre-test values of two collections of pupils are not considerably different. So before the yoga training, the academic achievement of secondary students has equal scores in biology.

From the table value it was showed that experimental and control group differed suggestively in its post-test values. The attained 't' value 11.69 was greater than its table score 2.58 at 0.01 level of significance. An attained value of student in experimental group 54.51 is higher than mean value of control one, i.e. 25.23. So it was inferred that students in experimental individual have high academic accomplishment compared to the control group. So yoga was active for emerging academic achievement of secondary school students.

The study figured the whole sum of squares of alteration mean square variance for post-test and also premeditated the F-ratio. The end Y values are modified for alteration in first X values. For SSy has altered for any variability in Y, subsidised through X. The attuned sum of squares for Y (SSy) and F ratio was calculated and evaluated. The pre- and post-test values of experimental as well as control individual of students were tabularized through ANCOVA.

Table 2: The significance alteration in yoga preparation for academic achievement of secondary school students through ANCOVA.

Source	Sum of Squares	df	Mean Square	F	Sig.
Academic Achievement	1451.244	1	1451.244	16.163	.000
Group	13843.142	1	13843.142	154.179	.000
Error	6015.670	67	89.786		
Total	133757.000	70			

The relevance of value obtained Fy.x was investigated. The resultant Fy.x proportion was noteworthy (Fy.x = 154.17; P0.01), because the table score of F for df 1/67 is 7.08 at the 0.01 level. It is evident therefore that after adjusting for beginning differences on X, the 2 final means that dependent on the experimental as well as control variable vary dramatically.

The corrected means of post-test values (Y means) of students in experimental as well as control individuals are calculated by the researcher. The significance of the variations among the adjusted Y means was investigated. The corrected means of students' post-test results in the experimental as well as control group were listed below.

A. Comparing of Attuned Means

Table 3: Pre- and post-test values of the students in the experimental as well as control individuals, corrected means

Groups	N	Mx	My	My.x (Adjusted)	Mean difference	SEm	t	Level of Significance
Experimental	35	29.63	54.51	54.01	28.92	2.27	12.74	P<0.01
Control	35	27.34	25.23	25.27				

From Table 't' for df 68 (total), $t_{0.01}$=2.58

Attuned Y denotes for Post-test score was evaluated for consequence on academic achievement. The table score of 't' by df 68 is 2.58 at 0.01 range. The evaluated score of 't' was 12.74. Meanwhile the examined 't' score was higher than the table score, it was important at 0.01 range (t=12.74; p<0.01). A substantial alteration among the altered Y Means designates a students in the Experimental as well as Control groups change suggestively in score to complete the Academic achievement in the Post-test. Meanwhile the Adjusted Mean of Experimental category was importantly greater than the Control one, it might decided that students taught through Yoga Training has good Academic achievement than those trained via Activity Oriented Method of Teaching at secondary stage.

X. Findings of the Work

The most significant discovery of these experimental research is that yoga is effective on the academic achievement of secondary students. It also improved students' attention, concentration and memory. Through practising *raja yoga*, students have increased their mind control, and experienced values in their education and built better rapport among teachers and fellow students. They were more comfortable and happy to sit in the classroom and in their homes for learning more and more of their lessons. Their level of understanding was developed and they experienced the full meaning of the teachers' explanations in the classrooms. Through yoga practising, the students turned disciplined and thus the teaching and learning process became easy in the classroom.

XI. Implications of the Study

The researcher has proved that those who practise yoga can develop cognitive skill. Psychosomatic and educational problems of students can be eradicated by practising yoga. Yoga was efficient for the pupils who have distractions, attention deficit hyperactivity disorder (ADHD), deprived care span, less memory as well as conduct disorders, etc. By enhancing their cognitive abilities students can achieve greater heights in their academic career.

XII. Discussion

According to the findings of this study, yoga training can significantly improve secondary students' academic performance. The experimental as well as control individuals' scores differed considerably in the post-test. Another research by Ellen, C. Sternberg (2017) on impacts of daily yoga practise on academic appointment and achievement of middle school pupils in a special teaching classroom found that there had been an uptick in both students' interaction and scholastic success, as well as a greater level of student fulfilment. In the studies of Vaughn and Swanson (2015) revealed that there was effective outcomes in engagement and achievement on students practising yoga.

XIII. Conclusion

The experimental work proved that everyday yoga repetition in schools for a shorter time helped to increase the scores in academic accomplishment of secondary school students. If the education department includes yoga practices in school curriculum, it will calm the mind of the students and improve their cognitive abilities. It also shows that through yoga the consciousness-based approach to education can develop the overall personality of the students.

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