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Impact of Meditation on Academic Achievement of Students:

An Experimental study

Dr. Shweta Talesara

Research Scholar: Vikram University

Abstract: Meditation is the oldest system of personal development in the world encompassing the entire body, mind and spirit. The overall aim of Meditation is attainment of physical, mental and spiritual health.

Meditation is a part of Yoga. Since meditation harmonizes the growth and help in total development. It should be introduced in the educational system for all round personality development of students. The practice of meditation not only helps to keep the young body strong and supple but also incorporate mental activities and disciplines that help to develop attention, concentration and stimulate the creative abilities that are latent within the child. Studies on normal children have indicated that regular practices of Meditation help in Psychological improvement of intelligence and memory quotient. In the content of scholastic achievement meditation exercise demonstrated to develop a relaxed mental state.

Sage Patanjali had given the idea of Meditation 4000 years ago. It is a conscious process of gaining mastery over the mind, body and soul. All great men like Swami Vivekanand, Mahatma Gandhi, Shri Aurobindo, Rabindranath Tagore etc. emphasized the importance of Meditation in Education. Keeping these facts in view the researcher has taken the present study 'The Impact of Meditation on the Academic Achievement of the students'.

Keywords: Meditation, Academic Achievement, Experimental study.

Background and Rational of the Study:

Modern Indian education has considerably failed in its endeavour in helping the youth in understanding themselves and in developing a comprehensive view of life and its significance. The present type of education is mostly devoid of training the youth in independent thinking, result them becoming mediocre. Education has become merely a tool in imparting bookish knowledge which is mainly examination and job oriented ant there is no chance given to think freely. Students are not trained to develop into integrated persons. Youth have to face many problems and challenges of life, but they are not fir enough to face

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them. From the material side, they have an urge to be successful and to have security and comfort their lives. Not securing them, as generally is happening in the present day, they develop discontentment and fear, which automatically hinders their spontaneity in understanding life intelligently. They avoid new experiences and thereby lose the spirit of adventure. The discontentment in life makes them revolt against the existing social order and this brings opposition and constant struggle. This struggle need not be external only, but internal also, which is more dangerous and leads them into all kinds of problems.

Education policy- makers and educationists are not yet fully convinced of the efficacy of Meditation. Theoretical and practical aspects should be included in the syllabus, as a regular part of the curriculum. Meditation trains the students in attaining self-knowledge and discipline from within. Students must be taught moral and spiritual values of human life and the path to follow them. Any academic knowledge can be considered as virtually meaningless and useless without the knowledge of Meditation.

Youth, through proper education in Meditation, can come to the true understanding of the significance of life. Meditation caters to the development of the whole being. It develops in the youth, a harmony of life. It removes ignorance of the biological functioning of the body and teaches how to be physically fit and alert and through Meditation methods and techniques, enables them to control their emotions, which are the root cause for many evils. It enhances intellectual powers and memory and stability of mind, which aids in developing them into high intellectuals. Meditation leads them in the path of moral and spiritual life. Youth will develop a comprehensive outlook of life as a whole and thereby lead a meaningful and fruitful life. A study of Meditation in the educational institution, as a compulsory core subject is the best solution to the present evils of the youth.

The present study throws light on the impact of Meditation on Academic Achievement of students and deals with the improvement of student's achievement in school subjects. It has proved to be very interesting and very important conclusions have been derived. It is intended to provide on the valuable inter-relationship among Meditation and education. There is an urgent need of re-introducing meditation and Dance in modern Indian education system. It tries to recommend to the extent it can, the different stages of Meditation methods which should be introduced at different levels of education.

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Objectives:

The present study aimed to investigate the effect of Meditation on Academic Achievement of the students and the objectives were formulated as mentioned below:

- To study the effect of Meditation on memory.
- To study the effect of Meditation on Concentration.
- To study the effect of Meditation on Academic stress.
- To study the effects of Meditation on Academic Achievement.

Variables:

1. Dependent Variables- Memory, Concentration, Academic Stress and Academic Achievement.
2. Independent Variables- Meditation, Sex (Boys and Girls).

Academic Achievement: f (memory, concentration, academic stress)

- ✓ Academic achievement a memory:
  Academic achievement is directly proportion to memory.
  If memory increases academic achievement increases.
- ✓ Academic achievement a concentration:
  Academic achievement is directly proportion to concentration.
  If concentration increases academic achievement increases.
- ✓ Academic achievement a 1/ academic stress:
  When academic stress increases, academic achievement decreases; when academic stress decreases; academic achievement increases.

Hypotheses:

1. There is no significant difference between the post-test scores of control group and experimental group in the various components of the stroop test.
2. There is no significant difference between the post-test scores of control group and experimental group in the various components of the Students Academic Stress Scale (SASS).

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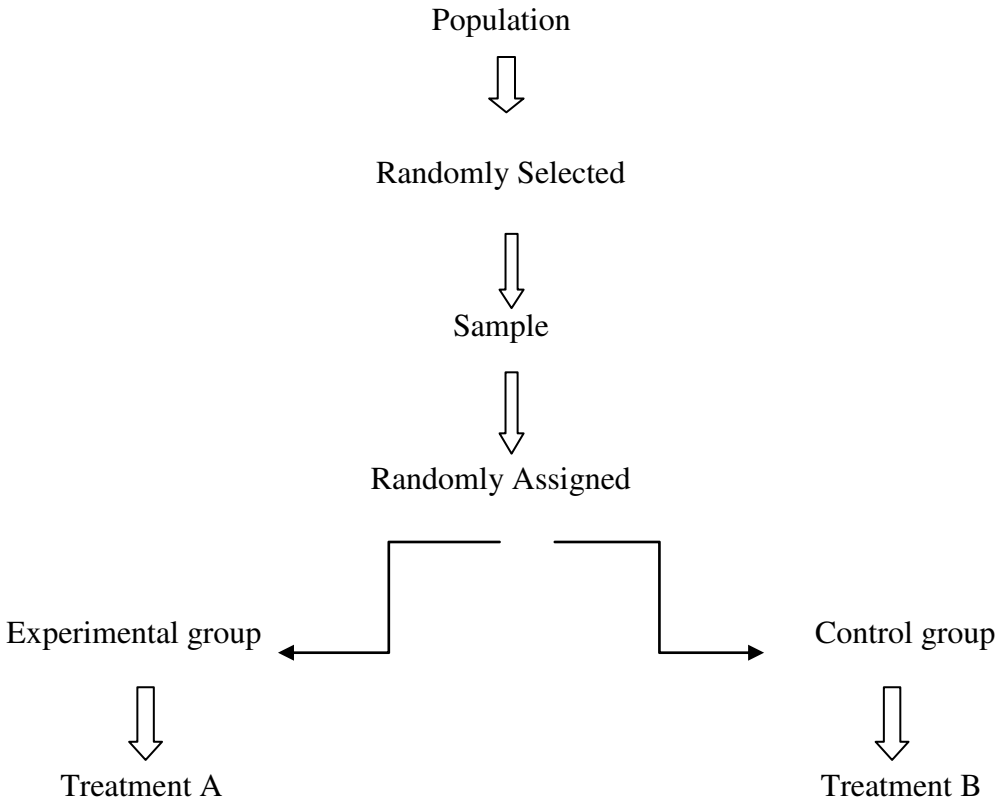
3. There is no significant difference between the post-test scores of control group and experimental group in the various components of the memory test.
4. There is no significant difference between the post-test scores of control group and experimental group on the academic achievement.

Method:

The researcher followed the Experimental Method and chosen the two- group simple randomized design.

Two- group simple randomized design:

In a two- group simple randomized design, first of all the population is defined and then from the population a sample is selected randomly. Further, requirement of this design is that items, after being selected randomly from the population, be randomly assigned to the experimental and control group (such random assignment of items to two groups is technically described as principle of randomization). Thus, this design yields two groups as representatives of the population. In a diagram form, this design can be shown in this way as follows:



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Treatment:

- The main aim of the study was to study the effect of Meditation on Academic Achievement. Academic Achievement depends on memory, concentration and academic stress. The analysis of review literature had shown that memory and concentration can be enhanced by Meditation practice. The techniques bring changes in brain and develop memory and concentration. Academic stress is said to be reduced by the practice of Meditation and Academic Achievement.

  To study the impact of Meditation on Academic Achievement in detail the researcher followed the above mentioned experimental design. The steps of experimental research is followed very carefully as the study is to know the impact of Meditation techniques. The following steps are involved in the process.

1. The Students from each school were divided in the two groups as experimental group (80) and control group (80).
2. Four schools were selected in Ujjain, State of Madhya Pradesh the total students consists of 160 in number. The groups in each school were matched for means in the experiment.
3. The experimental group has therefore given Meditation for 8 months as described below.

Meditation Intervention:

- The various styles were taught to students that increase memory and concentration and reduce stress.
- Various dhyana and self realization techniques were taught, especially, Vedantism, self-concept etc.
- The students were given the treatment of Meditation Glove, as it claims the mind and develops the left and right hemisphere of the brain.
- Practice of Meditation.

Sample:

- Deliberate sampling is also known as purposive or non-probability sampling. This sampling method involves purposive or deliberate selection of particular units of the universe for constituting a sample which represents the universe. The researcher used

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judgement for selecting items which he considered as representative of the population and also suitable for his research purpose.

- The researcher selected four schools in the city Ujjain, M.P. The schools were Takshshila School, Nirmala Convent School, Lokmanya Tilak School, Saint Paul School. The 11th class students from A and B Sections of each school were selected consisting of boys and girls. Since the work was experimental study, the researcher had chosen for the sake of conducting experiments.

  The details of the sample taken are shown below:

S.N.	Name of School	Total of No. of Students	Boys	Girls
1	Takshshila School	40	20	20
2	Nirmala Convent school	40	20	20
3	Lokmanya Tilak School	40	20	20
4	Saint Paul School	40	20	20

- The 40 student's class 11th of each school were divided into two groups to constitute experimental group (20) and control group (20). The two groups were formed on the basis of the scores obtained on the special test designed by the investigator for the purpose of dividing the students into experimental group and control group.

Tools used in the study:

Stroop colour and word test used to measure attention and concentration, student's academic stress scale (SASS) was used to measure academic stress, Ebbinghaus nonsense syllables list to measure and half- yearly and year-end marks were taken to see the academic performance of the students.

Stroop colour and word test (Stroop):

In the present study, the Victiria version of stroop colour and word test developed by M. Regard in 1981 was used. This is an adaptation of the original STROOP developed by J. Ridley Stroop in 1935.

The test measures the ability of a individual to suppress his/her habitual response or capacity to change the habitual set in order to confirm to the needs of an unusual demand. In short it is a measure of cognitive flexibility.

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Student's Academic Stress Scale (SASS):

In the school/college situation, this pressure may be accountable for an individual's success or failure. Hence, this kind of stress like academic stress is an important factors accounting for variation in academic success.

SASS which is developed to identify the sources of academic stress among students is a 40 item scale of rating. This is developed and designed by Kim (1970). The scale was adopted by Rajendra and Kaliappan (1990). Srinivasan further adopted the scale in 1997. Student's academic stress scale (1997) consists of 40 items divided into five components namely,

- Personal inadequacy (F_1)
- Fear of failure (F_2)
- Interpersonal difficulties with teachers (F_3)
- Teacher- pupil relationship/teaching methods (F_4)
- Inadequate study facilities (F_5)

It is a five point rating scale varying from the response of "no stress" to "extreme stress" with regard to degree of stress. The rating scale is scored as 0-1-2-3-4. Therefore 16 (4×40) is the maximum possible score and the highest score or each factor would be 32. Each factor has equal number of items. The higher the value of the score, greater the academic stress.

Memory test:

Ebbinghaus, a german experimental psychologist was the first to study memory scientifically and to investigate the properties of human memory experimentally. To observe this process, he divided a set of item to be committed to memory that would have no previous association, the so-called nonsense syllables in the year 1885. These consist of a sequence of consonant combinations (CVC) that do not mean anything in one's language. He used nonsense syllables precisely because they were difficult to remember and easy to forget and because they had very little intrinsic meaning. Ebbinghaus constructed lists of these 20 of these items.

Data Collection:

At the beginning of the experiment period a pre-test was conducted by using the various tools used for the purpose. The four tests which were administrated are

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Stroop, SAAS test, Memory Test, Student's Academic Stress test and Academic tests in various school subjects.

The responses given by the two groups formed the vital data required for the study and it is designed as data prior to the actual experimental or intervention.

At the end of the experiment (Meditation intervention) again the above mentioned tests were administrated to the two groups. The scores of the two groups on various tests in the pre-test and post test are taken for the analysis and comparisons.

Statistical Tools used for Data Analysis:

Foe analyzing the data generated by the experimentation, researcher used SPSS and Means, Standard Deviations and t-scores were calculated for the groups.

Results:

The researcher presented the data in tables and graphs. The interpretation for each table and graph were presented, keeping in view the corresponding objectives and hypothesis of the present study.

Table 1: Comparison between the post test scores of the experimental and control groups on stroop test

Stroop Test		Control Group (n=80)	Experimental Group(n=80)	t-value
Dots Time	Mean	36.23	29.32	3.34
	S.D.	7.46	7.92	
Dots Errors	Mean	8.09	7.41	4.82
	S.D.	2.13	3.01	
Words Time	Mean	34.98	29.87	3.98
	S.D.	6.03	8.15	
Words Errors	Mean	8.49	5.23	6.78
	S.D.	3.82	5.32	
Colours Time	Mean	39.52	21.54	4.99
	S.D.	9.17	30.14	
Colours	Mean	39.42	4.18	

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Errors	S.D.	34.32	27.16	6.23
Total Time	Mean	102.82	82.78	5.98
	S.D.	21.84	45.15	
Total Errors	Mean	54.56	15.73	6.94
	S.D.	37.73	34.89	

*Significant at 0.05 level **Significant at 0.01 level

Graphical representation of the post test scores of the experimental and control groups on stroop test is given in Figure 1.

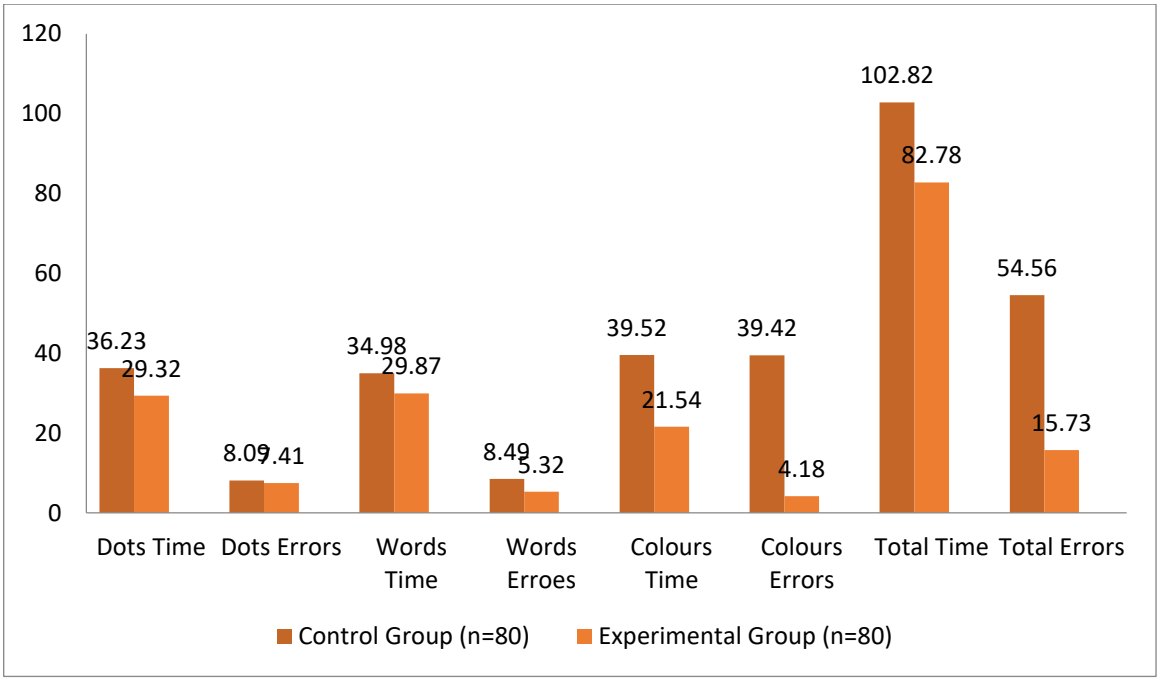

Figure 1: Post test scores

From the table the obtained t-scores present that there is significant difference between the experimental and control groups in the post tests scores in the different elements of stroop test. The experimental group presented significant decrease in all the areas of the stroop test. This may be due to the effect of Meditation and dance intervention received by the experimental group.

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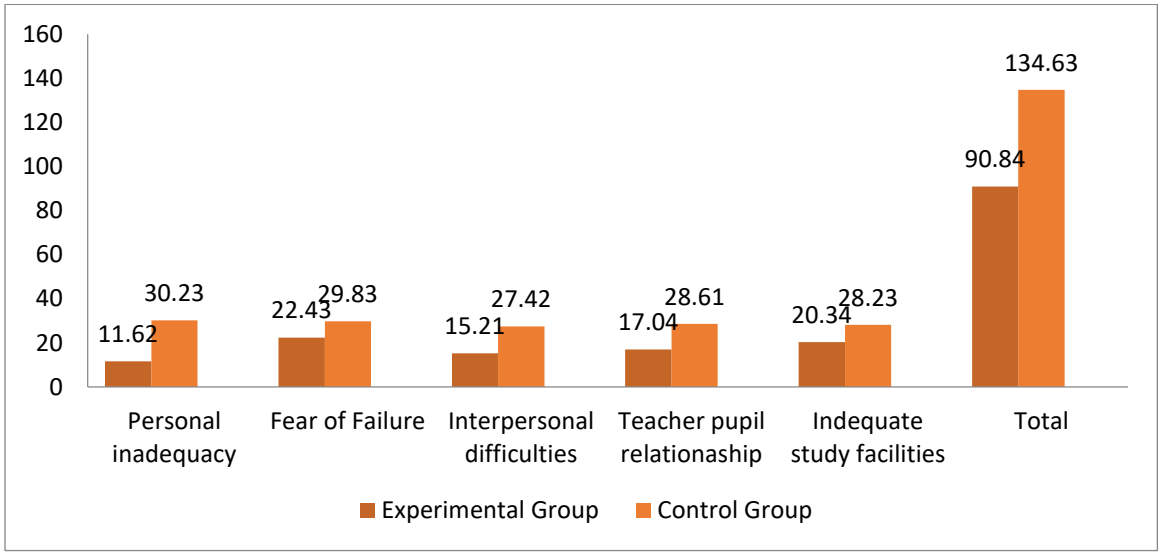
Table 2: Comparison between the post-test scores of the experimental and control groups on SASS

		Experimental (n=80)	Control (n=80)	t-value
Personal Inadequacy	Mean	11.62	30.23	10.39
	S.D.	10.74	12.96	
Fear of Failure	Mean	22.43	29.83	7.72
	S.D.	7.25	8.02	
Interpersonal difficulties	Mean	15.21	27.42	9.91
	S.D.	8.49	12.47	
Teacher pupil relationship	Mean	17.04	28.61	8.07
	S.D.	8.98	12.42	
Inadequate study facilities	Mean	20.34	28.23	5.94
	S.D.	6.65	7.34	
Total	Mean	90.84	134.63	8.09
	S.D.	44.38	55.59	

Graphical representation of the post test scores of the experimental and control groups on stroop test is given in Figure 1.

Figure 2: Post test-SASS



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According to the table 2 the obtained t-scores suggest that there is a significant difference between the experimental and control group in the post test scores. There is a significant difference in all the five areas of the student academic stress scale in case of experimental group. This may be due to the Meditation and dance intervention received by the experimental group.

Table 3: Comparison between the post-test scores of the experimental and control groups on Memory

		Experimental Group (n=80)	Control Group (n=80)	t-value
Total Responses	Mean	39.98	33.24	4.09
	S.D.	9.04	13.58	
Correct Responses	Mean	40.58	31.89	8.72
	S.D.	6.82	9.86	

*Significant at 0.05 level, **Significant at 0.01 level

Graphical representation for the experimental and control groups on Memory is given in figure.

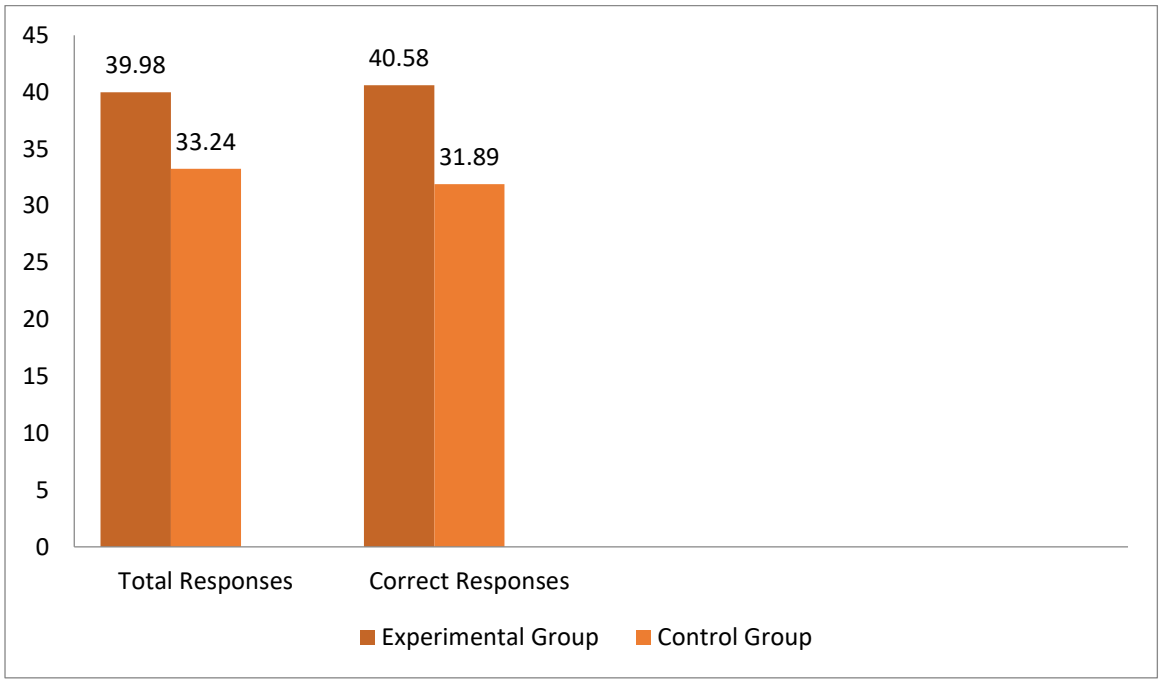

Figure 3: Test on Memory

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According to table 3, t-scores suggest that there is significant difference between the post-test mean scores of the experimental and control groups on the components of the memory test that is total response and correct responses.

Table 4: Comparison between the post test scores of experimental and control groups in academic achievements

		Experimental Group (n=80)	Control Group (n=80)	t-value
English	Mean	61.73	53.07	3.25**
	S.D.	21.26	17.32	
Mathematics	Mean	64.37	55.57	1.60*
	S.D.	29.43	32.69	
Science	Mean	66.31	58.34	1.87
	S.D.	26.18	27.62	
Social	Mean	74.85	69.67	1.45
	S.D.	21.09	18.72	
Sanskrit	Mean	59.79	61.56	1.40
	S.D.	22.43	24.76	
Hindi	Mean	83.18	62.68	5.45**
	S.D.	20.99	28.42	
Computer	Mean	70.59	73.87	0.79
	S.D.	21.79	27.63	
Total	Mean	489.25	428.78	2.01*
	S.D.	165.97	178.21	

*Significant at 0.05 level, **Significant at 0.01 level

Comparison of the post test scores of experimental and control groups in school subjects is given in Figure 4.

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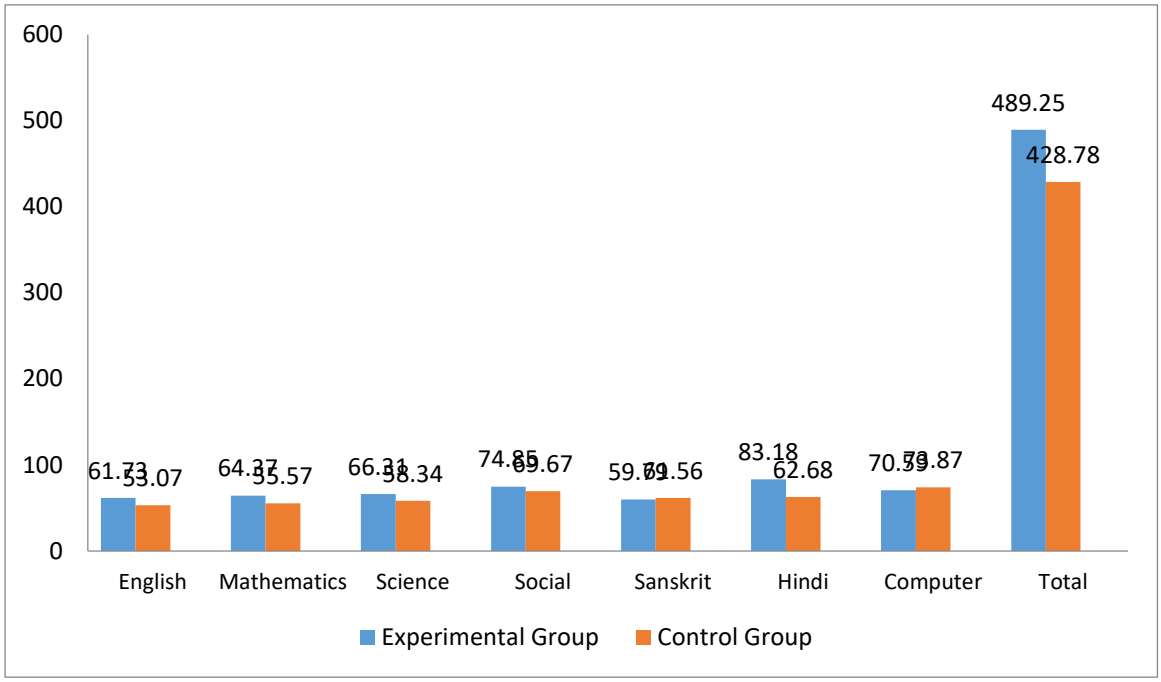

Figure 4: Post test on school subjects

According to the table 4 the obtained t-scores suggest that there is significant difference between the post text scores of experimental and control groups in subjects like English, Hindi and Science. The experimental group has done extremely well in English, Science and Hindi.

Conclusions:

The most important objective of this study was to examine the impact of Meditation on the Academic Achievement of students. The factors that mostly influence Academic Achievement were considered as Memory, Concentration and Academic stress. The whole study was directed to know the impact of Meditation on Memory, Concentration and academic stress and at the end on Academic Achievement. The study was conducted with a Purposive Sample of 160. The investigation progressed by following "Two-group simple randomized design."

The inferences were drawn mostly by comparison of pre-test and post-test scores of the Experimental and control groups. On the basis of major findings of the study following conclusions were drawn.

1. It is found that Meditation had brought remarkable improvement in the experimental group, which has received Meditation treatment.

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2. The experimental group Students had performed well in the memory test. This shows that the Memory levels of that received Meditation intervention has improved much.

3. The results show that the Academic Stress of Experimental group decreased to a greater extent in comparison to control group. This reduction in Academic Stress may be attributed to Meditation intervention received by the Experimental group.

4. The results of Stroop test show that the Concentration level of Experimental group has shown remarkable improvement in all the components of Stroop test. This may be due to Meditation received by the Experimental group.

5. The results of Academic Achievement show that the group which received Meditation intervention scored well in the various school's subjects. This may be attributed to the Meditation intervention received by the Experimental group.

6. Finally the study reveals the fact that Meditation intervention given to the experimental group was very effective and it has improved the Memory levels, concentration levels of the Experimental group. The Stress levels of Experimental group decreased due to the Meditation intervention.

Implications:

1. Meditation improves fitness, promotes relaxation and self- confidence and reduces stress and anxiety. People who practice Meditation tend to have good coordination, postures, flexibility, concentration, sleep habits and digestion. Meditation is a complementary therapy that has been used with conventional therapies to help treat a wide range of health problems, but it is not a cure any particular disease.

2. All branches of Meditation mentioned above use three major techniques breathing, exercise and Meditation. These three techniques have been shown to improve health in many ways.

3. This study helps to the students for doing Meditation daily in life.

4. Government should encourage the research projects to enhance memory, reasoning ability, reduction of academic stress, increase of concentration levels by including Meditation in the school curriculum for rural students.

5. The students may be encourages to get physical fitness and respect our Culture and Heritage.

6. Meditation helps in developing all round personality of students.

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