Developing Span of Attention Through Pranayama Among Students with Mild Intellectual Disabilityof Jammu District

***6.Dr.THOMAS FELDMAN**

Abstract

The title of the study is "Developing Span of Attention Through Pranayama Among Students with Mild Intellectual Disabilityof Jammu District" The purpose of the study is to find out the effect of pranayama over regular classroom activities. Experimental method was used to conduct the study. The sample was taken from Model Academy Inclusive school- Jammu. Purposive sampling technique was employed for the study. Subjects were matched by conducting pre-posttest and were assigned to experimental and control group. There were 10 students with mild intellectual disability (i.e IQ 54-70). Experimental group was given 20 days' intervention programme in the form of pranayama for duration of 45 minutes. In order to check the improvement in the span of attention, both the groups were made to complete the given standardized Digit Vigilance Test in the given time. When compared the scores of experimental and control group significant difference in correct response and time taken was found. The comparison of mean scores of correct responses by experimental group was (285.20) higher than control group (257.20). And the comparison of the mean scores of time taken by experimental group was (13min.) less than control group (19 min.). The result showed positive effect of pranayama on developing span of attention among students with mild intellectual disability.

Key Terms; Pranayama, Span of Attention, Intellectual Disability

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Dr. Rohnika Sharma, Associate Prof. and HoD, UG Department, MIER College of Education (Autonomous). B.C. Road Jammu (J&K)

Introduction

"When the *breath wanders the mind is unsteady, but when the breath is still, so is the mind still"* ***-Hath Yoga Pradipika.***

We use the word 'attention' frequently in our day-to-day conversation. During lectures in the classroom, a teacher calls for your attention to what he is saying or what he writes on the blackboard. At a railway station or other public places, announcements start with "your attention please" before informing the passengers or other people about the schedules of the trains or some other matter of public interest. Thus attention is taken as a power, capacity or faculty of our mind, which can be turned on or off at will or something in kind or form that can be lent or given to this or that situation. However, this notion, as we shall find out, is misconceived. Attention can never be considered as a force or a faculty of the mind. We must try to understand it in terms of an act, a process or a function

Attention is the concentration of consciousness upon one subject rather than upon another.**Dumville (1938)**

Attention is the process of getting an object of thought clearly before the mind.

-Ross (1951)

Attention can be defined as a process which compels the individual to select some particular stimulus according to his interest and attitude out of the multiplicity of stimuli present in the environment. - **Sharma, R.N. (1967)**

The body, breath and the mind are intricately interwoven. When the air moves the mind moves and when the air is stilled the mind also could be stilled. Pranayam i.e breathing through a particular nostril has shown to have significant effect in developing attention, studies reveals that Pranayama activate the left hemisphere of the brain which is necessary for intellectual abilities including attention and concentration. These simple, yet powerful breathing practices have a unique advantage over many other forms of treatment: they are

free from unwanted side-effects, cut health care costs, and are easy to learn and practice in daily life

Children who are intellectually disabled normally function at low level; their intellectual level and **span of attention are below average.** Hence, they face difficulties in understanding and learning conceptual skills. Children with intellectual disability have significant difficulties in maintaining attention while performing activities. **It is very difficult for them to retain their attention for few minute.** They are usually slow in overall development, in learning to walk; speech is usually delayed and some may not be able to talk at all. A few may look normal physically but suffer from other physical anomalies like short stature, low set ears, high hunched palate, narrow forehead, small size of head; some others have other kinds of retardation as well, that is, they may be deaf etc. Most children with mental retardation have other behavioural disorders like **poor attention span**, hyperactivity, stubbornness, temper tantrums, aggressive behaviour.

These children can be treated up to great extent with the help of yogic techniques. First ever workshop on TEACHING YOGASANA to the children with mental retardation was organized at Madras by **Krishnamacharya Yoga mandiram (KYM) and Vijay Human Services (VHS) during 20-30, 1987**. Practically all children with mental retardation have difficulties in coping with their day to day activities. Scientific studies conducted by KYM & VHS have shown that special educators can teach yoga asana to the children with mental retardation. Significant improvements have been noted in the students as well as changes in the teachers themselves.

Jamie (2004) studied the effect of yoga therapy on attention span in academic setting. The research involved six students with mental retardation, ranging in age from 10 to 12

years old. The main behavior characteristic of students was inattentiveness. The results show significant improvement of attention span of students.

In June, 2010, Yoga session has been organized for the children of Vasantham Special School for the mentally challenged by a public charitable trust. Considering their special needs and abilities, to sustain their interest and enthusiasm, the yoga course were designed in such ways that it includes all that children love to do. Alli Murugesan, Principal of the school says that teaching yoga helped the children acquire good co ordination of body movements. Students are showing less signs of hyperactivity, tension and anger."The results are much more what we are expecting". (The new Sunday express/ August 15, 2010-Yoga through music, dance and stories).

The above studies reveal that yoga has positive impact in developing span of attention. As the children with mental retardation have difficulty in sustaining attention, it affects their performance in the daily living as well as the academic performance. As attention level improves as a result of yoga practice, the overall performance of the children also improves.

Need & Significance of the study

Lack of attention is one of the characteristics of children with intellectual disability. Attention is essential for selection, acquisition and comprehension of stimuli. Without attention, the process of learning cannot be successful. The role of attention is pivotal in learning. Various techniques need to be used in order to improve attention in children with intellectual disability. We have seen that, practicing of Yoga is therapeutically useful for different ailments like asthma, Hypertension and diabetics. As yoga has a positive impact on the overall development, the study has been selected to find out the effect of Pranayama on developing span of attention of secondary level children with mild intellectual disability. If the study has been found effective the Pranayama could be used by the special educators in

the curriculum, as co curricular activity in order to develop attention of children with mental retardation.

Objectives of the study

- To find out the significant difference between the pre and post-test mean scores of correct responses made by control group in given digit vigilance test.
- To find out the significant difference between the pre and post-test mean scores of correct responses made by experimental group in given digit vigilance test.
- To find out the significant difference between the post test mean scores of correct responses made by control and experimental group in performing digit vigilance test.
- To find out the significant difference between the pre and post-test mean scores of time taken in performing digit vigilance test by experimental group.
- To find out the significant difference between the pre and post-test mean scores of time taken in performing digit vigilance test by control group.
- To find out the significant difference between the post-test mean scores of time taken by control and experimental group in performing digit vigilance test.

Hypothesis set for the study

- There will be no significant difference between the pre and post-test mean scores of correct responses made by control group in given digit vigilance test.
- There will be significant difference between the pre and post-test mean scores of correct responses made by experimental group in given digit vigilance test.
- There will be significant difference between the post-test mean scores of correct responses made by control group and experimental group in performing digit vigilance test

- There will be significant difference between the pre and post-test mean scores of time taken in performing digit vigilance test by experimental group.
- There will be no significant difference between the pre and post-test mean scores of time taken in performing digit vigilance test by control group.
- There will be significant difference between the post-test mean scores of time taken by control group and experimental group in performing digit vigilance test.

Research Design

This study should explain cause effect relationship between the variables and hence the investigator has selected true experimental study with control and experimental group – pre/post test design.

Sample selection

The investigator selected purposive sampling procedure for selection of the sample of individual with intellectual disability. A total sample of 10 children comprised of both male and female studying at Model Academy Inclusiveschool, Jammu, has been selected based on the following inclusion criteria.

Inclusion criteria

- Mild intellectual disability (50-70 IQ).
- Age range 6 -14 years.
- Able to identify number 1 to 9 in multiple choice situations.
- Able to follow simple instructions, was selected considering their intellectual ability and functional ability.

Table :1 Particulars of the sample: age, gender & I.Q

Control Group				Experimental Group			
No	**Age**	**Gender**	**I.Q**	**No**	**Age**	**Gender**	**I.Q**
C 1	14yrs	Male	60	E 1	10yrs	Male	70
C 2	13 Yrs	Female	70	E 2	10 yrs	Male	70
C 3	14ys	Male	59	E 3	9 yrs	Male	68
C 4	10yrs	Male	55	E 4	14yrs	Female	68
C 5	13yrs	Male	70	E 5	10yrs	Male	68

The table (1) shows the total description of the sample selected for the study. For the study 10 students with mild intellectual disability both male and female studying at Model Academy Inclusiveschool, Jammuwas selected.

Measuring Instruments (Tools)

- Performa for demographic details.
- Digit Vigilance test (Lezak-1995**)**

Administration Procedure

The subject is made to sit comfortably and the digit vigilance sheet is placed in front of the subject. The subject is asked to scan the sheet and cancel the target numbers 6 and 9 (by drawing a "/" or "*" mark on them). He/she is asked to cancel the digits as fast as possible without missing the targets or canceling wrong numbers.

Score

There are three scores:

- The number of correct responses Sum total of the number of 6 and 9 which have been cancelled by the subject.
- Error score ---- Sum total of the number of omission that is the number of 6 and 9 which have not been cancelled and the number of commissions that is the number of digits other than the target digits which have been cancelled,
- Time taken to complete the test.

A series of t-tests were conducted to find out the differences obtained in correct responses and time taken while performing digit vigilance test on the mean achievement scores

Results & Discussions

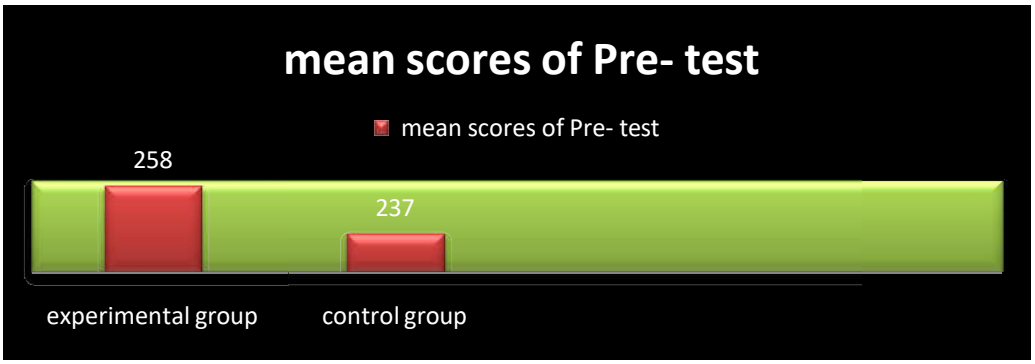
A series of t-tests were conducted to find out the differences obtained in correct responses and time taken while performing digit vigilance test on the mean achievement scores between pre and post test for both experimental and control groups. The results are presented below with following tables and graphs.

Table: 2

Comparison of pre test Means, SDs, t- Value of control and experimental group in correct responses (Digit vigilance test).

Groups	N	Pretest Mean	SD	df	t-value	Sig.
Experimental Group	5	258.00	20.35	8	1.23	NS
Control Group	5	237.80	30.41			

Figure – 1Graphical representation of pre-test mean scores of control and experimental group



The above given table (2) & figure (1) indicate pre-test mean scores of control and experimental group in correct responses in digit vigilance test. The mean scores of experimental and control group is 258 and 237 with standard deviation of 20.35 and 30.41 respectively. The t- test was conducted to find out whether there is any significant difference between pre test mean scores of experimental and control group in correct responses made in the given digit vigilance test. The result indicates t-value of 1.23, which is not significant. Hence these groups can be treated as homogeneous group for the study of effect of Pranayama in developing span of attention among secondary level children with mild intellectual disability.

Hypothesis - 1

There will be no significant difference between the pre and post-test mean scores of correct responses made by control group in given digit vigilance test.

Table – 3

Comparison of Pre and Post Test Mean Scores of control group in correct responses (Digit vigilance test).

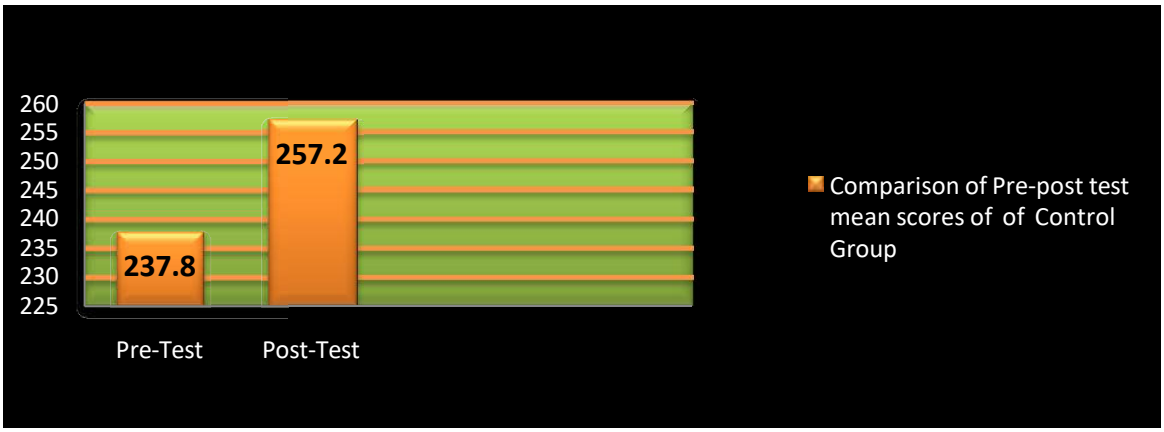
Tests	N	Mean	SD	df	t-value	Sig.
Pre-Test	5	237.80	30.41	4	3.91	.01

Post-Test	**5**	**257.20**	**20.52**			

Total Score = 288

Figure – 2

Graphical representation of pre-post test means scores of control group.



The above table (3) & figure (2) represents the mean, SD of the pre-test and post-test of control group of all five children and "t" value for the attention. The mean for the pre-test on correct responses is 237.80, where as it is 257.20 for the post-test. SD for pre-test is 30.41, as compare to 20.52 for the post-test. The "t" value is 3.91 which is significant at .01 level. **This difference may be due to practice. Hence hypothesis no.1 is rejected.**

Hypothesis – 2

There will be significant difference between the pre and post-test mean scores of correct responses made by experimental group in given digit vigilance test.

Table - 4Comparison of Pre and Post Test Mean Scores of Experimental group in correct responses (Digit vigilance test).

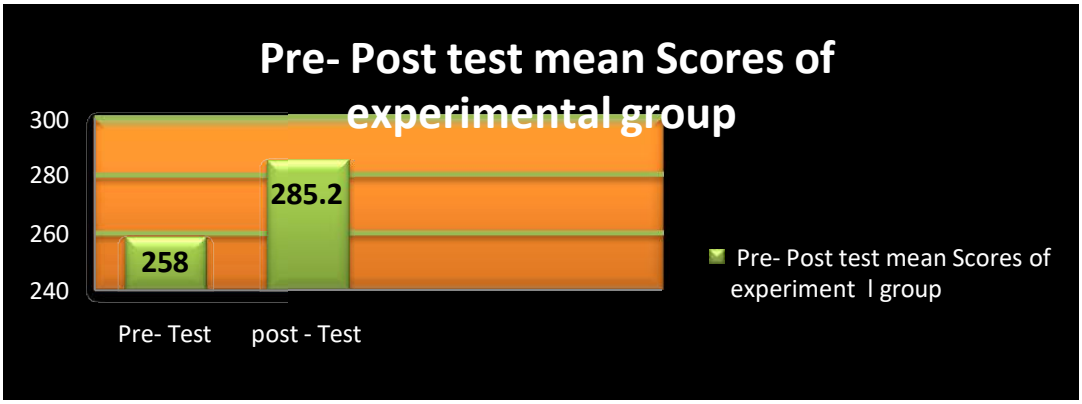
Tests	N	Mean	SD	df	t-value	Sig.
Pre-Test	5	258	20.35	4	3.34	.01

Post-Test	5	285.20	2.94			

Total Score = 288

Figure – 3

Graphical representation of pre-post test mean scores of experimental group.



Above table (4) and figure (3) represents mean scores, SD of the pre-test & post-test of experimental group of all five children and "t" value for the correct responses. The mean for the pre-test on correct responses is 258.20, where as it is 285.20 for the post-test. SD for pre-test is 20.35, as compare to 2.95 for the post-test. The "t" value is 3.34 which is significant at .01 level. This means there is a significant effect of Pranayama in developing span of attention. **Hence hypothesis no.2 is accepted.**

Hypothesis – 3

There will be significant difference between the post-test scores of correct responses made by control and experimental group in performing digit vigilance test.

Table -5Comparison of post test Means, SDs, t- Value of control and experimental group in correct responses (Digit vigilance test).

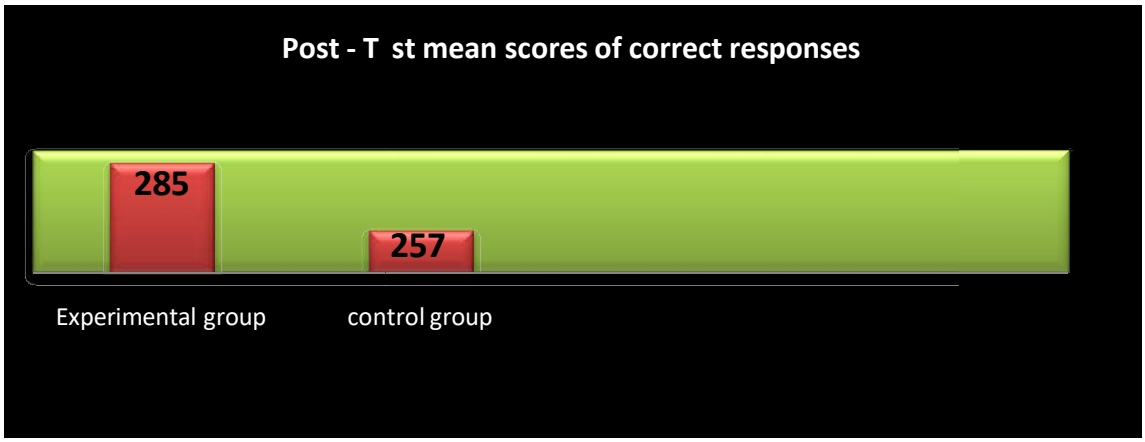
Groups	N	Post test Mean	SD	df	t-value	Sig.

Experimental Group	5	285.20	2.94	8	3.02	.00
Control Group	5	257.20	20.52			

Total Score = 288

Figure-4

Graphical representations of post test mean scores of experimental and control group.



Above table (6) and figure (4) represents mean scores, SD of the post-test of correct responses in given digit vigilance test by experimental group is 285.20 and control group is 257.20 with standard deviation of 2.94 and 20.52 respectively. The t- test was conducted to find out whether there is any significant difference between post test mean scores of experimental and control group in correct responses made in the given digit vigilance test. The result indicates t-value of 3.02, which is significant at .00 levels. This means there is a significant effect of Pranayama in developing span of attention. **Hence hypothesis 3 is accepted.**

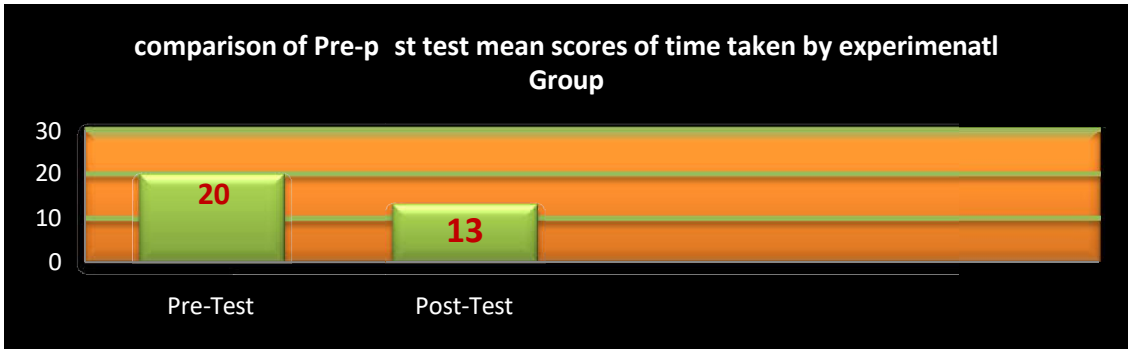
Hypothesis – 4 There will be significant difference between the pre and post-test mean scores of time taken in performing digit vigilance test by experimental group.

Table-6Comparison of Pre and Post Test Mean Scores of Experimental group in time taken (Digit vigilance test).

Tests	*N*	*Mean*	*SD*	*df*	*t-value*	*Sig.*
Pre-Test	*5*	*20*	*0*	*4*	*12.78*	*.000*
Post-Test	*5*	*13*	*1.22*			

Figure – 5

Graphical representation of pre-post test mean scores of experimental group.



Above table (6) and figure (5) represents mean scores, SD of the pre-test & post-test of experimental group of all five children and "t" value for the time taken. The mean for the pre-test on time taken is 20, where as it is 13 for the post-test. SD for pre-test is 0, as compare to 1.22 for the post-test. The "t" value is 12.78 which is significant at .00 level. This means there is a significant effect of Pranayama in developing span of attention. **Hence hypothesis no.4 is accepted.**

Hypothesis – 5

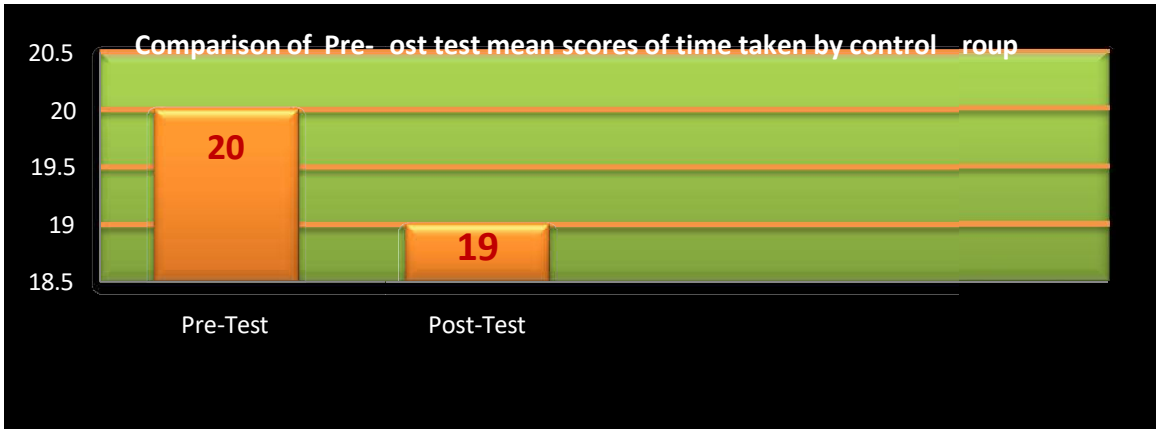
There will be no significant difference between the pre and post-test mean scores of time taken in performing digit vigilance test by control group.

Table – 7Comparison of Pre and Post Test Mean Scores of control group in time taken (Digit vigilance test).

Tests	**N**	**Mean**	**SD**	**df**	**t-value**	**Sig.**

Pre-Test	**5**	**20.00**	**.00**	**4**	**1.58**	**NS**
Post-Test	**5**	**19.00**	**1.41**			

Figure – 6Graphical representations of pre-post test mean scores of control group.



Above table (8) and figure (7) represents mean scores, SD of the pre-test & post-test of control group of all five children and "t" value for the time taken. The mean for the pre-test on time taken is 20, where as it is 19 for the post-test. SD for pre-test is 0, as compare to 1.41 for the post-test. The "t" value is 1.58 which is not significant .This means there is no significant effect of Pranayama in developing span of attention among control group. **Hence hypothesis no.5 is accepted.**

Hypothesis - 6

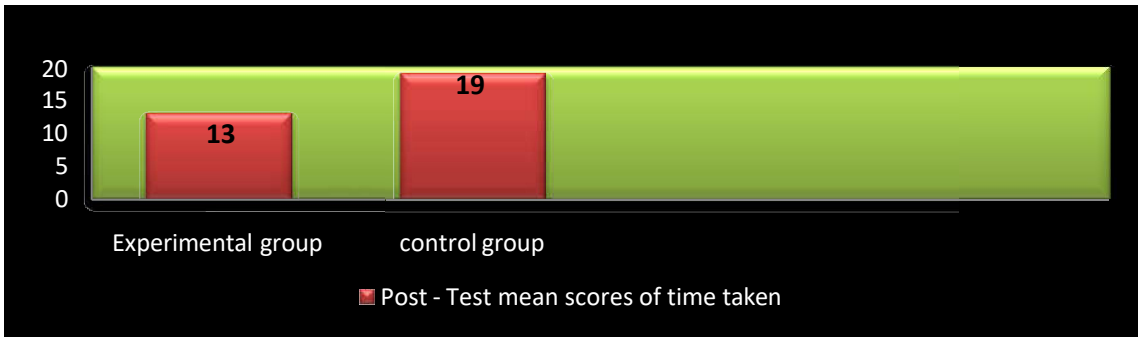
There will be significant difference between the post-test mean scores of time taken by control group and experimental group in performing digit vigilance test

Table – 8

Comparison of post test Means, SDs, t- Value of control and experimental group in time taken (Digit vigilance test).

Groups	N	Post-test Mean	SD	df	t-value	Sig.
Experimental Group	5	13.00	1.22	8	7.17	.00
Control Group	5	19.00	1.41			

Figure – 7 Graphicalrepresentations of posttest mean scores of experimental and control group.



Above table (8) and figure (7) represents mean scores, SD of the post-test of time taken in given digit vigilance test by experimental group is 13 and control group is 19 with standard deviation of 1.22 and 1.41 respectively. The t- test was conducted to find out whether there is any significant difference between post test mean scores of experimental and control group in correct responses made in the given digit vigilance test. The result indicates t-value of 7.17, which is highly significant at .00 levels. This means there is a significant effect of Pranayama in developing span of attention**. Hence hypothesis no.6 is accepted.**

Conclusion

The results of data analysis confirms that there is a positive effect of Pranayama on developing span of attention among secondary level children with mild intellectual disability. On following the pranayama on regular basis children with mild intellectual disability will be able to perform the given task by committing less error and with more concentration. As a

significant difference was found between the post tests mean scores of experimental and control group. Finally, the result of the study supported the fact that pranayama has a positive impact on developing span of attention among children with mild intellectual disability.

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