Learning Ability of College Level Students: Influence of Yoga and Degree of Association among Determinants

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Abstract
Present study was based on sixty college level boys between the age group of 19 to 23 years of KIITUniversity, Odisha. Randomly divided into two groups with yogic exercises in experimental group for 12 weeks against control, where no additional exercise was administered. The pre and post experiment learning ability variables were analysed and revealed that, yoga brought significant improvement in overall learning ability of college level students. The learning ability variables like Passage Comprehension Test, Word Series Test, Digit span Test, Number Detection Test and Listening Comprehension Test were significantly improved in yoga group compared with those of control group in the present study. Besides, significantly high degree of association was observed among the determinants judging the learning ability.
Key words: Association, Determinants, Influence, Learning ability, Yoga

Introduction

Positive effect of yoga on the physical, mental and psychological states of human beings is considered to be a complete science of life, and an excellent sport for body and spirit. Inculcating the habit of yoga from very young is perhaps the ideal way to achieve balance in the mind-body-soul realm. There are a few prerequisites those emerge out of yoga are good health, a calm mind, sincerity, and to rise above our human imperfections.

Learning is both a process and a product. Learning as a process includes such things as how the child is learning. Learning as a product includes the level and type of competencies attained by the child in relation to the learning task. Learning is universal and continuous. Every creature that lives learns. In human beings it is not restricted to any particular age, sex, race or culture. It is a continuous, never-ending process that extends from the womb to the tomb.

. Thus, looking in to the present day context, the study has been very appropriately undertaken which is a unique one in its approach. The purpose of this study was to determine whether participation in yogic exercise programme influences the learning ability of college level boys or not.

Materials and Method

Sixtycollege level boys of KIIT University, Bhubaneswar, Odishabetween the age group of 19 to 23 years were taken at random as subjects. All the subjects were divided randomly into two groups. They was one experimental group named as yoga group and the other one as control group, having 30 numbers of students in each group.The yoga group was administered with yogic exercise programmewith scheduled asana and pranayama as below:

Description of yoga (Experimental) group activities:

Keeping in view the viability or feasibility of the present study, the following yogic activities were given as treatment to the subjects for 12 weeks Three classes in week with duration of 40 minutes each were the timing schedule for the yoga group. The yogic activities included Asanas and Pranayama.

Asana

1. Vriksasana, 2. Tadasana, 3. Natarajasana, 4. Padmasana, 5. Ardha-matsyendrasana, 6. Ustrasana, 7. Bhujangasana, 8. Dhanurasana, 9. Ardha-shalbhasana, 10. Sarvangasana, 11. sputa-vajrasana and 12. Shavasana

Students were instructed to maintain each yogasana at least for a period of 30seconds.

Pranayama

1. Bhastrika Pranayama, 2. Anuloma-viloma Pranayama, 3. Kapalabhati Pranayama, 4. Bhramari Pranayama

The control group was denied either the physical activity or yoga for the experimental period of 12 weeks. The following parameters were taken as components of learning ability to study the effect of yoga.

1. Passage Comprehension Test, 2. Word Series Test, 3. Digit span Test, 4. Number Detection Test, 5. Listening Comprehension Test

The estimates with regard to all above parameters on every subject were recorded before and after the experimental period of 12 weeks, subjected to statistical analysis and presented in Table 1 and 2 for comparison between groups through 't' test and Pearson's correlation coefficient among the variables, respectively.

Results and Discussion

Results obtained as average learning ability variable estimates at pre and posttest level across groups are presented in Table 1. The pretest estimates on passage comprehension test were34.389±0.065 and 34.468±0.125 for yoga and controlgroup, respectively without significant difference between those. Corresponding posttest estimates were 36.501±0.167 and 34.389±0.050, respectively revealing passage comprehension test estimate of control group significantly lower than that of yoga group.

The word series test scores of subjects were homogenous at pre test level with estimates of 11.353±0.024 and 11.398±0.028 for yoga and control group, respectively but the post test estimates were 12.721±0.025 and 11.414±0.031, respectively with significant difference between those. Yoga group realized higher word series test scores than that of control group, indicating positive effect of yoga on the parameter.

The digit span test estimates for yoga and control group were 17.481±0.121 and 17.533±0.942, respectively without significant difference among those at pretest level, which were recorded as 20.017±0.071 and 17.567±0.113, respectively at posttest level with significant difference among those. Yoga group recorded better value than the control group revealing significant improvement of this vital learning ability parameter in yoga group.

The pretest estimates on number detection test were73.685±0.167 and 73.737±0.169 for yoga and control group, respectively without significant difference between those. Corresponding posttest estimates were 76.611±0.136 and 73.689±0.179, respectively revealing number detection test score of control group significantly lower than that of yoga group.

The listening comprehension test estimates for yoga and control group were 9.302±0.009 and 9.311±0.009, respectively without significant difference among those at pretest level, which were recorded as 9.633±0.014 and 9.298±0.014, respectively at posttest level with significant difference among those. Yoga group recorded better value than the control group revealing significant improvement of this vital learning ability parameter in yoga group.

Positive effect of yoga on learning ability might be due to asanas and pranayama, which have proved repeatedly as great techniques to relax the mind and body. During the process, the body relaxes and mind stays more alert. Overall, the body starts functioning in the right way. Body gets stretched due to yoga postures and induces relaxation. The main body parts get affected because of which the blood circulation in the body becomes smooth. This corroborates with the findings of Sahasi (1984), who concluded that participating in yoga activity enhances attention. Similar results were reported by Mandanmohan*et al*. (2003) Ray *et al* (2001) and Vempati and Telles (2002).

Table 1. Comparison of averages in physiological parameters

Variables	Stage of experiment	Yoga Group	Control Group	p value
Passage comprehension test	Pre test	34.389±0.065	34.468±0.125	0.118
	Post test	36.501±0.167	34.389±0.050	<0.001
Word series test	Pre test	11.353±0.024	11.398±0.028	0.196
	Post test	12.721±0.025	11.414±0.031	<0.001
Digit span test	Pre test	17.481±0.121	17.533±0.942	0.278
	Post test	20.017±0.071	17.567±0.113	<0.001
Number detection test	Pre test	73.685±0.167	73.737±0.169	0.213
	Post test	76.611±0.136	73.689±0.179	<0.001
Listening comprehension test	Pre test	9.302±0.009	9.311±0.009	0.311
	Post test	9.633±0.014	9.298±0.014	<0.001

The degree of association among determinants of learning ability, with respect to pretest scores, as shown in Table 2 were found to be positively significant and very high ranging from 0.838 to 0.939. Thus the coefficient of determination among the variables on learning ability ranged from 70.22% to 88.17%. The Pearson's correlation coefficient among determinants of learning ability, with respect to posttest scores, as shown in Table 2 were found to be significant, positive and high ranging from 0.811 to 0.964. Hence the coefficient of determination ranged from 65.77% to 92.93%.

Table 2. Pearson's correlation coefficient among scores on learning ability determinants

	Passage Comprehension Test	Word Series Test	Digit span Test	Number Detection Test	Listening Comprehension Test
Passage Comprehension Test	1	0.822	0.816	0.811	0.823
Word Series Test	0.859	1	0.960	0.865	0.944
Digit span Test	0.838	0.887	1	0.919	0.964
Number Detection Test	0.885	0.847	0.865	1	0.895
Listening Comprehension Test	0.877	0.934	0.939	0.925	1

*The correlation coefficients below the diagonal are for pretest and above diagonal are for post test scores

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