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A Study On Kinesthetic Sense And Motor Creativity Of Academic Performance Group And Sports Performance Group

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Abstract: Active life needs movement, because movement is the basis of life. Exercise helps to improve the all round development. Any type of movement requires several qualitative ability of neuro-muscular response. So the aim of the study was set to observe the kinesthetic sense and motor creativity of academic performance group and sports performance group. For the purpose of the study 30 boys securing 75% or more marks in the Higher Secondary (12grade) examination and 30 boys who represented their district in any sorts discipline were chosen as subjects. The age ranges between 18years to 22years of the subjects. The distance perception jump and motor creativity test battery were selected to measure kinesthetic sense and motor creativity of the subjects. The obtain data were processed the statistics of Mean, standard deviation and standard error of mean. To find out the mean difference between the two groups't' test was employed at $p<0.05$level of confidence. Result showed that sports performance group was significantly superior to academic performance group in relation to kinesthetic sense and motor creativity.

Key words: Kinesthetic sense, motor creativity, academic performance group, sports performance group.

INTRODUCTION :

Human being is the best entity in the world due to his super organism. The modern man is a result of long term evolution. Traditionally, nature and nurture have been understood to be antagonistic and two separate factors that determine the behavior of individual. In the light of scientific advancement in genetics the exclusive character of one's influence or the other has been challenged. Human beings are said to posses highest form of life only because they have learnt in the environment to modify strengthen, weaken or at times completely check their drives urges and impulses bestowed on them by nature. Biologists have proved beyond doubt structural and functional inter connectivity of organic systems so commonly reflected in behavior.

Behavior is a mechanism of reflex which is highly related with mental process. From the childhood stage human being learns to behave according to the conditions (internal and external). And most learning process precedes motor processes i.e. we observe, think and act. All these observations, thinking ability and action (motor) largely depend upon the sensory organs-eyes ears, tongue, nose and skin. The coordinated activities of all these five organs play a vital role for our learning attitude. But the proprioceptor which helps us to greater feelings is known as kinesthetic sense. This is such a feeling that a person concerned is not always aware of it. It helps a person to react directly, systematically and according to the situation.

In this context a story from Mahabharata can be cited. In Mahabharata, Druphad, the king of Panchal in order to marry his daughter to a heroic prince organized a “royal contest” inviting the renowned princes from all around his kingdom. In this contest the Pandavas who had been in 'banabas' appeared at the royal court. The condition to win Draupadi was that whoever would shoot the eye of moving fish above, seeing the reflection of it in the pond below, be the only fortunate one to wed her. Arjun the third Pandava succeeded in this effort being a skillful archer and was widely applauded by all courtiers present there.

This special sense which had helped Arjun to hit the target was the kinesthetic sense. The proprioceptor helps one for sensation of internal as well as external stimulus and to react accordingly. Kinesthetic sense helps players to perceive the position of our body segments, position of the implement, and position of the teammate or the opponent during the complex movement. From the ancient period of time man has created various movements a requirement of biological need as well as cultural. Speaking, reading, writing, dancing, swimming or playing all that activities are the result of Cognitive, affective and effective learning. These cannot be categorized into completely physical and / of mental compartments. In the modern society man is able to perform more complex bodily movement in his regular life. Especially in various professions, different motor movement is required. In case of typing, working in factories, offices or even a doctor has a fine motor coordination during an operation. As the central nervous system controls the total system of the body so thinking ability and sensation are closely related. Creative response is related to motor fluency,

flexibility and originality which is highly related with cognitive process and without cognitive ability academic performance is not possible. On the other hand sensation and motor creativity is highly required for better performance of a sportsman.

This interest of thought motivated the investigator to take up the present study. It was a sincere attempt on the part of the investigator to compare between academic performance group and sports performance group in relation to kinesthetic sense and motor creativity.

Purpose of the study:

The purpose of the study was set

1. To determine the academic achievement group and sports performance group of subjects.
2. To determine the kinesthetic sense of all the subjects.
4. To determine the motor creativity of all the subjects.
5. To compare kinesthetic sense and motor creativity between academic performance group and sports performance group.

Hypothesis:

It was hypothesized that academic performance group of subjects are not significantly different with that of sports performance group of subjects in relation to kinesthetic sense and motor creativity.

METHODOLOGY:

Subjects: For the purpose of the study 30 boys securing 75% or more marks in the Higher Secondary (12 standard) were chosen as subjects belonging to academic performance group and 30 boys who represented their district in any sports discipline were chosen as subjects belonging to high sports performance group. The age limit of the subjects range between 18 to 22years.The study was conducted in the district of Coochbehar of West Bengal.

Criterion measure: The 'Distance perception jump' has been selected to measure the kinesthetic sense and a motor creativity test battery used by M.C. Ghosh (1991) has been selected to measure the creative motor response of the subjects.

Statistical analysis: The obtained data were processed that statistics of the't' ratio was employed to find out the mean difference between two groups of subjects in relation to kinesthetic sense and creative motor response.

RESULT AND DISCUSSION:

Table -1 shows the distribution of mean values and standard deviations of kinesthetic sense and motor creativity of the academic performance group (APG) and sports performance group (SPG) of the subjects. In respect of kinesthetic sense of APG and SPG were 9.76±2.588 and 7.54±3.511. The table also shows that the mean and SD of motor creativity of the groups were 68.66±16.822 and 146.42±6.879 respectively.

Table-1: Mean and SD of the groups

Groups	Kinesthetic perception		Motor creativity	
	MEAN	SD	MEAN	SD
APG	9.16	2.91	83.13	11
SPG	7.66	2.52	145.76	8.65

From table -1 it is evident that high sports performance group is slightly superior to high academic performance group in relation to kinesthetic sense as lower the score better was the performace. In case of motor creativity high sports performance group was found for superior to high academic performance group.

Table-2: Mean difference between the groups in relation to kinesthetic sense

GROUPS	MEAN	Mean Diff.	SE	't'ratio
APG	9.16	1.5	0.7	2.14*
SPG	7.66			

*Significant at 0.05 level of confidence. T (0.05)58=2.00

From table -2 it was observed that there was significant difference between the two groups in respect of kinesthetic sense. From the obtained data it was found that kinesthetic sense between academic performance group and sports performance group was significantly different. It was also found that sports performance group was significantly superior to academic performance group.

Table-3: Mean difference between the groups in relation to motor creativity

GROUPS	MEAN	Mean Diff.	SE	't'ratio
APG	83.13	62.63	2.55	24.52*
SPG	145.76			

*Significant at 0.05 level of confidence. T (0.05)58=2.00

Table -3 clearly indicates that in relation to motor creativity there was significant difference between academic performance group and sports performance group. The table also demonstrates that the mean difference of motor creativity of both the groups was statistically significant. The sports performance group was superior to academic performance group in relation to motor creativity.

ANALYSIS OF THE RESULT:

From the obtained data and its statistical analysis it was found that kinesthetic sense and motor creativity between academic performance group and sports performance group was significantly different. In the both case sports performance group was found superior to academic performance group. Sports man has to perceive through different sense modalities during practice. Each modality is different in function, providing a specific type of stimulation. The modalities that are usually involved in increasing the sensitivity and in improving the interpretation and reaction to interpretation are sight, hearing, touch and pressure (Fait and Dunn, 1984). The processes of perception depend upon the receptors associated with nervous system is called sensory receptors or neural receptors to differentiate them from the receptors on target cells for chemical communication. A sensory receptor can be defined as a biological transducer which can convert (transduct) various

forms of energy into action potential (AP) in the sensory nerves to which they are connected (Fait and Dunn, 1984). The core elements of the bodily- kinesthetic intelligence are control of one's bodily motions and capacity to handle objects skillfully. Gardner elaborates to say that this intelligence also includes a sense of timing, a clear sense of the goal of physical action along with the ability to train responses so they become like reflexes (Gerald Grow). On the other hand creativity is closely related with cognitive process. But in case of creative motor response it cannot be developed through proper practice. The academic performance group practice their regular academic subjects but not participate in motor movement regularly as the sports performance group do. The components of motor creativity (fluency, originality, flexibility etc.) can be developed through exercise participation of divergent motor activity. In case of team game players are not always concern about opponent's movement or strategies. As a result players have to create new movement according to the need. Probably this was the cause behind the superiority of sports performance group to academic performance group in relation to motor creativity.

Justification of hypothesis:

It was hypothesized that there would be no significant difference between academic performance group and sports performance group. But after analysis and interpretation of findings it was found that sports performance group was significantly superior to academic performance group in respect of kinesthetic sense and motor creativity. Hence, the null hypothesis is rejected.

CONCLUSION:

Based on the findings of this study this may conclude that sports performance group is superior to academic performance group in relation to kinesthetic sense. This may also conclude that sports performance group is superior to academic group in relation to motor creativity. Based on the related research reviews this can safely be conclude that sports activity helps to improve the qualitative factors like kinesthetic sense and motor creativity of persons.

RECOMMENDATION:

On the basis of the result findings the following recommendations are made for future research studies.

The study might be undertaken with a large number of subjects so that result should have greater reliability. The study might be undertaken with female students also.

Similar studies might be taken up with other group and other activities also.

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