RELATIONSHIP BETWEEN INTELLIGENT QUOTIENT AND KINESTHETIC INTELLIGENCE OF SCHOOL CHILDREN

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ABSTRACT: The purpose of this study was to find out relationship between intelligent quotient and kinesthetic intelligence of school children. The kind of sense organs found within the muscles and joints are called proprioceptors. These sense organs are concerned with kinesthetic senses that, in general, unconsciously tell us where our body part in relation to our environment. Kinesthetic sense is measure of kinesthetic intelligence. In other words kinesthetic sense is one of the mean to asses to kinesthetic intelligence. The study and measurement of Intelligence has been an important research topic for nearly 100 years. Intelligence is what people use to learn, remember, solve problems and in general deal effectively with the world around them. To fulfill the demand of the study 1500 school students (750 male and 750 female) of SAS Nagar, Panchkula and Chandigarh were selected. As Kinesthetic is the sense of position, location and orientation so, it was measured by kinesthetic obstacles test and for intelligent quotient pramila group intelligence test was used. Mean difference between genders for all selected parameters was assessed in terms of independent sample t-test. To compare the difference between cities test of variance Analysis of variance ANOVA (one way) was applied with post-hoc multiple comparisons. To establish relationship between study parameters; intelligence quotient and bodily-kinesthetic intelligence Pearson's co-relation co-efficient was used. For all the inferential statistics level of significance was taken as 0.05.

Key Words:

INTRODUCTION

Intelligence is an average numerous dissimilar ability, rather than a unitary with specific identifiable properties. There are properly as many definitions of Intelligence there were experts who study it. Intelligence is the ability to learn, to understand and interact with one's environment. Intelligence is a very complex topic. We can become more intelligent through study and practice, through access to appropriate tools, and through learning to make effective use of these tools (Perkins, 1995). The study and measurement of Intelligence has been an important research topic for nearly 100 years. IQ is a complex concept, and researcher in this field argues with each other about the various theories that have been developed. There is no clear agreement as to what constitutes IQ or how to measure it. Intellectual ability is a complex phenomena influenced by factors both environmental and biological. Intelligence is what people use to learn, remember, solve problems and in general deal effectively with the world around them. Kinesthetic intelligence is the ability to control body movements and handle objects skillfully. These learners express themselves through movement. They have a good sense of balance and eye-hand co-ordination. Physical Educator has long recognition of kinesthetic sense. Sleinhaus declares that our muscles see more than our eyes. Individual who can observes a demonstration, perceive the significance of the sequence of movements are able to develop a physical empathy, which enables than to learn a movement much faster than others whose Kinesthetic ability is not highly developed. Kinesthetic perception can be improved through practice. If cognitive abilities is not a part of teacher's perception of intelligence, then students who are strong in intelligence areas other than linguistic, logical and mathematical may have limited or no opportunities to learn and exhibit their knowledge through their areas of strength. Learning methods also contribute to one's academic success. What a student learns depends up on his learning method. Students think and learn in many different ways. It also provides educators with a conceptual framework for organizing and reflecting on curriculum assessment and pedagogical practices. In turn, this reflection has led many educators to develop new approaches that might better meet the needs of the range of learners in their classrooms. A student who posses kinesthetic intelligence cannot neglect his academic studies because he must meet minimum academic standards to remain in school, struggling to keep up with their classmates, these students develop survival skills which enable them to barely maintain their grade levels. A student who shows low abilities in academic achievement usually gets frustrated because of the lack of recognition he gets. So automatically, the child wants to disregard his dominant intelligence kinesthetic intelligence, will struggle to cope with his non-dominant intelligence aspect, and will be labeled as learning disabled.

METHOD AND PROCEDURE

The random sample technique was used to select 1500 school students (750 male and 750 female) of SAS Nagar, Panchkula and Chandigarh. The age of the students was between 10 to 13 years.To find out the intelligent quotient of students Pramila group test of intelligence was used to assess general intelligence of school children. In the questionnaire there are seven sub tests in the test book let. The first one is a practice test containing 10 very easy items. The performance in the practice test is not to be taken into account. This fact was not revealed to the students'. The remaining six sub-tests from 1 to 7 are the tests proper. For every test, one page has been devoted for instructions and practice examples. Directions for taking the test are printed on the test booklet. Answers were to be marked on the separate answer sheet provided. While undergoing the test students can indicate, the right answers by marking (x) in the space corresponding to the correct answer in the separate "answer sheet" Provided. If the student at any time made a mistake, they were asked to put a circle around the cross and mark the correct answer space. When tests began, students were not allowed to ask any doubts. They were instructed, when to begin and when to stop the test. The following is one of the example question:

Test Problems

1. O-S-M-E-U

A. Mouse B. Usage C. Enemy D. Ounce E. Sound

These letters are to be arranged in such a way that a sensible word is formed. Look at the five possible answers which are at A, B, C, D and E. The correct answer is at A. On the answer sheet in the space meant for TEST 1. Put a cross and mark the answer A.

Kinesthetic intelligence of the boys and girls were tested with the help of kinesthetic obstacle test Back ground information's were collected through questionnaires.

Objective: to measure ability to predict position during movement without the use of the eyes.

Age and Sex: Age 10 above and satisfactory for both boys and girls.

Reliability and Validity: .30 for female, .53 for male and without the use of eyes, there is obvious face validity.

Equipment and materials: 12 chairs (or similar objects), material for blindfolds, chalk markers or a tape marker and tape measures.

Directions: Arrange 12 chairs in accordance with the floor pattern. Each performer is allowed one practice trial walk through the course without a blindfold and one walk through the course blindfolded for a score. **Scoring**: The performer scores 10 points for each station he successfully clears without touching. There are 10 stations for a maximum score of 100 points **Penalty:** (a) there is 10 point penalty for touching any part of the body against any part of a chair. When such a penalty occurs, the performer is directed to the center line and one step ahead of the station where the penalty occurred. (b) There is 5 point penalty for each occurrence of getting outside of the line or pattern of the chairs, upon such occurrences, the performer is directed back into the center of the pattern at the nearest point which he went astray. **Additional points:** (a) the dotted line merely shows the ideal walking path and need not be drawn on the floor. (b) The two outside lines are boundary lines and should be indicated on the floor, (c) further experimentation with scoring systems is needed, since the reliability of the test was found to be quite low.



Fig.1.Equipments and materials

RESULTS AND DISCUSSION

Intelligent Quotient Level	Score	Frequency	Percentage (%)
Mentally defective	< 70	713	47.5
Borderline defective	70-79	278	18.5
Low Average	80-89	339	22.6
Normal or Average	90-109	170	11.3

Fig.2.Distribution of students according to their Intelligent Quotient

Distribution of students according to their Intelligent Quotient is shown in Fig.2. A total of Borderline defective students (N- 278), Low average students (N- 339), and normal or average students (N- 170) constitute the majority. A high number of 713 students were found to be mentally defective (Score- <70).

Kinesthetic Intelligence Level	Frequency	Percentage (%)			
Poor	187	12.5			
Average	775	51.7			
Excellent	538	35.9			

Fig.3.Kinesthetic Intelligence level of school children

Fig.3 tabulates the kinesthetic intelligence level of school children. The number of students having average Kinesthetic Intelligence level (N- 775) is the highest followed by students having excellent Kinesthetic Intelligence level (N- 538). The majority of students had average Kinesthetic Intelligence level.

City	Intelligent Quotient		Kinesthetic Intelligence		
	Mean	SD	Mean	SD	r-co-enicient
SAS Nagar	67.21	18.50	67.63	15.49	0.324**
Panchkula	70.59	18.21	70.87	14.27	0.289**
Chandigarh	69.40	18.91	69.76	13.39	0.389**
Total	69.07	18.58	69.42	14.46	0.337**

**- Significant (p<0.01)

Fig.4.Relationship between Intelligent Quotient and Kinesthetic Intelligence of school children.

The relationship between Intelligent Quotient and Kinesthetic Intelligence of school children is tabulated in Fig 4. For Intelligent Quotient, mean of students from Panchkula (M- 70.59) was highest and lowest in children from SAS Nagar (M- 67.21). Mean of Chandigarh students (M- 69.40) was the closest to the total mean (M- 69.07). In terms of Kinesthetic Intelligence, Panchkula (M- 70.87) recorded the highest mean. Mean of students from Chandigarh (M- 69.76) and SAS Nagar (M- 67.63) followed the mean of Panchkula. Total mean (M- 69.42) was very close to mean Kinesthetic Intelligence of students from Chandigarh (M- 69.76). Moderate relationship between Intelligent Quotient and Kinesthetic Intelligence was found in SAS Nagar (r co-eff- 0.324), Chandigarh (r co-eff- 0.389), and total. While highest mean in both Intelligent Quotient and Kinesthetic Intelligence was found in Panchkula still a weak relationship was found in Panchkula (r co-eff- 0.289).



Fig.5.Relationship between Kinesthetic Intelligence and Intelligent quotient

Linear relationship between Intelligent Quotient and Kinesthetic Intelligence is shown in Figure 5. A medium r co-efficient (r co-eff- 0.337) was found between Intelligent Quotient and Kinesthetic Intelligence. It was observed through the results that relationship between these two is not that positive among students. Weak to moderate positive relationship was visible between intelligent quotient and kinesthetic intelligence of school students. Intelligent quotient of all students was moderately(r = 0.337) related to kinesthetic intelligence. Among all cities Chandigarh confirmed moderate positive co-relation(r = 0.389) along with SAS Nagar(r = 0.324). Weak positive association was observed in Panchkula where mean intelligent quotient(M-70.59) and kinesthetic intelligence (M-70.87) were maximum.

CONCLUSION

Among all 1500 school students females(M-72.36) had significantly higher intelligent quotient than males(M-65.77). The test of variance ANOVAs showed significant difference in intelligent quotient of students between cities. Panchkula students had maximum(M-70.59) intelligent quotient which was significantly higher than SAS Nagar(M-67.21). Chandigarh students(M-69.40) showcased slightly less intelligent quotient than Panchkula. The intelligent quotient of Chandigarh females(M-73.86) was maximum among all. But SAS Nagarmales(M-62.91) demonstrated least intelligent quotient.

Regarding Kinesthetic Intelligence female (M-70.31) students evidently proved healthier than males (M-68.53). Students from three cities had significant F-ratio. Chandigarh (M-69.76) students had little less Kinesthetic Intelligence than Panchkula(M-70.87). Mean difference between SAS Nagar (M-67.63) and Panchkula was found significant. The average Kinesthetic Intelligence of female students was more than males in all three cities but in SAS Nagar significant mean difference between males and females was observed. Moderate positive relationship was established between intelligent quotient and kinesthetic intelligence of school students according to Pearson co-relation co-efficient. Chandigarh followed by SAS Nagar showed moderate co-relation but Panchkula demonstrated weak association between parameters. Average Intelligent quotient of females was significantly more than male students. Intelligent quotient in three cities was found statistically significant. Students from Panchkula were witnessed significantly more than SAS Nagar but slightly more but non-significant intelligent quotient than Chandigarh. The trend of intelligent quotient was similar to academic achievement thus pointing reason for academic growth of school students. Analyzing Kinesthetic Intelligence females had upper hand with significantly more average Kinesthetic Intelligence than male school students. The mean comparison of Kinesthetic Intelligence among cities was observed statistically significant. Likewise intelligent quotient mean Kinesthetic Intelligence was significant between SAS Nagar and Panchkula but non-significant between Panchkula and Chandigarh.The trend of total students was little dissimilar in Panchkula and Chandigarh with non-significant but more Kinesthetic Intelligence among females than males. But females in SAS Nagar had significantly more Kinesthetic Intelligence compared to males. The result proved that through keen observance and focus on main task different during any test physical testing the kinesthetic intelligence can be developed whether there were body differences. That is why the kinesthetic intelligence of a sports man is always superior to an academician we can also say that physical activities improve the quantity of kinesthetic intelligence and Kinesthetic learning (also known as tactile learning) is a style of learning that is solely devoted by physical activity, rather than listening to a lecture or watching a demonstration

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