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COMPARISON OF SELECTED MOTOR SKILL RELATED PERFORMANCE AND ACADEMIC ACHIEVEMENT AMONG THE SIXTH GRADE RESPONDENTS

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ABSTRACT: The purpose of the study was designed to find out the comparison of selected motor skill related performance and academic achievement among the sixth grade respondents. During the academic year 2012 – 2013, 30 boys and 30 girls studying in government higher secondary school, Silattur, Erichi, Aranthangi, Pudukkottai, Tamilnadu, India were selected to achieve the purpose of the study. They were selected based on their academic achievement in the quarterly examination as above average, average and below average achievers making up a total of 60 respondents. The age of the respondents ranges from 12 to 14 years. The academic achievement of the respondents in the quarterly examination was considered as independent variables for this study. The criterion variables selected for the study are motor skills related performance such as 50 mts run and vertical jump. The data were statistically analyzed by using Two Way (2x3) Analysis of Variance (ANOVA) for evaluating the influence of the two criterion variables. The obtained results have three F- ratio, two for main effect; the first F- ratio for rows (referring to gender) and columns (referring to academic achievement) and one for interaction (referring to the gender and academic achievement). The obtained F- ratio for column (referring to the gender and academic achievement) was significant. Scheffe's Test was used as Post Hoc Test separately for column to find out the significant difference between paired mean. In all the conditions, the significant level was fixed as 0.05 level, which was considered to be appropriate. The result reveals that there existed significant difference between the above average achievers and average achievers; above average achievers and below average achievers; and average achievers and below average achievers of gender on power. There existed significant difference between genders irrespective of academic achievement on speed. Hence it reveals that there was no significant difference between average achievers and below average achievers; and above average achievers and average achievers of gender on power. Further, it also reveals that there no significant difference on speed among the gender at different academic achievement.

Key Words: Speed, Power and Academic achievement.

INTRODUCTION

Educational task is to implant a desire and facilitate learning. The purpose of education is to teach a student to live his/her life or by developing their mind, body and equipping them to deal with reality. According to Tanjea (1989) the academic performance in a school is a standardized series of educational test and the performance is the action of a person or group when given a learning task [1].

Children engaged in daily physical education show superior motor fitness, academic performance and attitude towards school as compared to their counterparts who do not participate in daily physical activity. Many students in a private school do not attend regular classes of physical education. We should insist them to engage the classes to make their body fit, so that it gives more confidence, healthy body and mind to boost academic achievement. Physical activity is essential in promoting normal growth and mental functioning [2]

The benefit of motor fitness is that it contributes to the improvement of posture appearance through the development of proper muscle tone, greater tone flexibility and a feeling of well being. Physical activity generates more energy and thus contributes to greater individual productivity for both physical and mental task [3].

MATERIALS AND METHODS

The purpose of the study was designed to find out the comparison of selected motor skill related performance and academic achievement among the sixth grade respondents. During the academic year 2012 – 2013, 30 boys and 30 girls studying in a government higher secondary school, Silattur, Erichi, Aranthangi, Pudukkottai, Tamilnadu, India were selected to achieve the purpose of the study. They were selected based on their academic achievement in the quarterly examination marks as above average, average and below average achievers to a total of 60 respondents. The age of the respondents ranged from 12 to 14 years. The academic achievement of the respondents in the quarterly examination marks was considered as independent variables for this study. The respondents who scored 60 percent to 70 percent in the quarterly examination were considered as above average achievers; respondents who scored 50 percent to 60 percent in the quarterly examination were considered as average achievers and respondents who scored 40 percent to 50 percent in the quarterly examination were considered as below average achievers. The following criterion variables selected for the study are motor skill related performance such as 50 mts run and vertical jump. The data pertaining to the study were collected from the respondents with the help of standard test items mentioned in Table – I. The data were statistically analyzed by using Two Way (2x3) Analysis of Variance (ANOVA) which was used to evaluate the influence of the two criterion variables. The obtained results have three F- ratio, two for main effect; the first F- ratio for rows (referring to gender) and columns (referring to academic achievement) and one for interaction (referring to the gender and academic achievement). The F- ratio for rows tests the significant difference, if any, among the gender irrespective of academic achievement in each dependent variable. The F- ratios for

column analysis tests the significant difference, if any, among the respondents of academicachievement irrespective of gender in each dependent variables separately. The F- ratio for interaction compares the means for gender of the selected dependent variables among the academic achievement and was selected for this study. The obtained F- ratio for column (referring to the gender and academic achievement) was significant. Scheffe's Test which was used as Post Hoc Test separately for column to find out the difference between paired mean were significant. In all the conditions, the significant level was fixed as 0.05 levels, which was considered to be appropriate.

Table – I
SELECTION OF VARIABLES AND TEST ITEMS

<table>
<tr><td colspan="5">Criterion Variables</td></tr>
<tr><td colspan="3">Independent variables</td><td colspan="2">Dependent Variables</td></tr>
<tr><td colspan="3">Gender</td><td colspan="2" rowspan="3">Motor skill related performance</td></tr>
<tr><td colspan="2">Boys</td><td>Girls</td></tr>
<tr><td colspan="3">Academic achievement</td></tr>
<tr><td rowspan="2">Above average achievers (Respondents those who scored 60 percent to 70 percent)</td><td rowspan="2">Average achievers (Respondents those who scored 50 percent to 60 percent)</td><td rowspan="2">Below average achievers (Respondents those who scored 40 percent to 50 percent)</td><td>Speed</td><td>Power</td></tr>
<tr><td>50 mts run</td><td>Vertical Jump</td></tr>
</table>

STATISTICAL ANALYSIS

The data collected from the respondents on selected motor skill related performance and academic achievement was analyzed and presented in the following tables.

SPEED

The data on speed were analyzed by Two Way Analysis of Variance (2x3) and the obtained results were presented in Table – II

Table – II

SUMMARY OF TWO WAY ANOVA ON SPEED OF GENDER AT ABOVE AVERAGE, AVERAGE ACHIEVERS AND BELOW AVERAGE ACHIEVERS OF ACADEMIC ACHIEVEMENT

Source of variance	Sum of square	df	Mean square	F - Ratio
Rows (Gender)	38.886	1	38.886	49.199*
Columns (Academic achievement)	6.492	2	3.246	3.940
Interaction (Gender and Academic achievement)	1.991	2	0.995	1.208
Within (Error)	44.489	54		
Total	92.806	59		

*Significance at 0.05 level of confidence.

(The Table value required for significance at 0.05 level with df 1& 54 is 4.02; df 2&54 is 3.18).

Table II shows that the F –ratio of Rows for gender irrespective of academic achievers is 49.199 against the table value 4.02 (df 1 and 54) which is significant at 0.05 level of confidence. It implies that there is significant difference between the boys and girls irrespective of academic achievement on speed.

From the above table it is inferred that the F- ratio of columns for academic achievement irrespective of gender is 3.940 against the table value of 4.02 (df 1 and 54) which is not significant at 0.05 level of confidence. It implies that there is no significant difference between the respondents of academic achievers such as above average achievers, average achievers and below average achievers irrespective of gender on speed.

The table II also reveals that the F- ratio of Interaction for gender and academic achievement is 1.208 against the table values 3.18 (df 2 and 54) which is not significant at 0.05 level of confidence. It implies that boys and girls at different academic achievers do not differ significantly on speed.

POWER

The data on power were analyzed by Two Way Analysis of Variance (2x3) and the obtained results were presented in Table – III

Table – III
SUMMARY OF TWO WAY ANOVA ON POWER OF GENDER AT ABOVE AVERAGE, AVERAGE ACHIEVERS AND BELOW AVERAGE ACHIEVERS OF ACADEMIC ACHIEVEMENT

Source of variance	Sum of square	df	Mean square	F - Ratio
Rows (Gender)	9.665	1	9.665	0.275
Columns (Academic achievement)	418.265	2	209.133	5.961*
Interaction (Gender and Academic achievement)	52.153	2	26.076	0.743
Within (Error)	1894..527	54	35.084	
Total	2366.600	59		

*Significance at 0.05 level of confidence.
(The Table value required for significance at 0.05 level with df 1& 54 is 4.02; df 2&54 is 3.18).

Table III shows that the F –ratio of Rows for gender irrespective of academic achievers is 0.275 against the table value 4.02 (df 1 and 54) which is significant at 0.05 level of confidence. It implies that there is significant difference between the boys and girls irrespective of academic achievement on power.

From the above table it is inferred that the F- ratio of columns for academic achievement irrespective of gender is 5.961against the table value of 4.02 (df 1 and 54) which is significant at 0.05 level of confidence. It implies that there is significant difference between the respondents of academic achievers such as above average achievers, average achievers and below average achievers irrespective of gender on power. Further, individual mean comparison among the respondents of academic achievement levels were also made for interpretation by using the Scheffe‘s Post Hoc Test was employed and presented in the Table – IV

The table III also reveals that the F- ratio of Interaction for gender and academic achievement is 0.743 against the table values 3.18 (df 2 and 54) which is not significant at 0.05 level of confidence. It implies that boys and girls at different academic achievers do not differ significantly on power.

Table – IV

SUMMARY OF PAIRED MEAN DIFFERENCE BETWEEN THE DIFFERENT LEVELS OF ACADEMIC ACHIEVEMENT (COLUMNS) OF GENDER (RESPONDENTS) ON POWER

Gender	Above average achievers	Average achievers	Below average achievers	Mean difference	C.I
Boys	28.20	24.20		4.60*	2.92
	28.20		25.54	3.26*	2.92
		24.20	25.54	1.34	2.92
Girls	30.33	23.30		7.03*	2.92
	30.33		22.50	7.83*	2.92
		23.30	22.50	0.8	2.92

The above table indicates that the paired mean differences of gender on power between above average achievers and average achievers values was 4.60 and 7.03; above average achievers and below average achievers values was 3.26 and 7.83 respectively. The mean difference between above average achievers and average achievers; above average achievers and below average achievers was greater than the C.I values of 2.92. Hence it is inferred that there existed significant difference between the above pairs on power. Further it is also indicated from the table that the paired mean difference between the average achievers and below average achievers was 1.34 and 0.8 was less than the table values of 2.92. Hence, it is understood that there existed no significant difference among the above pairs on power.

DISCUSSION ON FINDINGS

From the analysis of data, it is found that there existed significant difference between the above average achievers and average achievers; above average achievers and below average achievers; and average achievers and below average achievers of gender on power. There existed significant difference between genders irrespective of academic achievement on speed**.** Feritas.D (2007) suggested that there were positive correlation between the powers with academic performance [4]. Edwards. J.U (2011) suggested that there is positive relationship between physical activity and fitness measures to academic performance among the sixth grade respondents [5]. Rasberry. C.N (2011) indicated that there is positive association between the academic achievement and physical fitness. Hillman.C.H, Castelli.DM (2010) suggested that from this study, the results showed that the regular practice of physical activity increases cognitive ability of third and fifth grade respondents [6,7]. Hence, it also reveals that there was no significant difference between average achievers and below average achievers; and above average achievers and average achievers of gender on power. The results indicate that there was no significant difference on speed among the different academic achievement irrespective of gender. Further, it also reveals that there existed no

significant difference on speed among the gender at difference academic achievement. Jimmy Byrd (2000) suggested that there is negative relationship between the physical activity and academic achievement among elementary students [8]. Hence, the researches show the results of the present study that girls and boys have equal motor fitness abilities with academic achievement. But particularly, there is more significant difference on power when compared to speed of criterion variables.

CONCLUSION

1. There existed a significant difference between genders irrespective of different academic achievers on speed.
2. There existed a significant difference between the above average achievers and average achievers; above average achievers and below average achievers of gender on power.
3. There was no significant difference between average achievers and below average achievers of gender on power.
4. There was no significant difference on speed among the different academic achievement irrespective of gender.
5. There was no significant difference on speed among the gender at different academic achievement.

RECOMMENDATIONS

Based on the findings of the present investigation the following recommendations were drawn.

1. Similar studies may be conducted on male respondents in schools, academic discipline andat university levels.
2. Similar studies may be conducted taking the university semesters marks and school grades point marks.
3. A study may be conducted to select the most important independent variables in the orderof priority towards criterion variables.

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