



Effect Of Various Game On Physical Competence Of School Students

Dr. Bhupendra Singh Chouhan (Dean) Faculty of Physical Education, Bhupal Nobles' University, Udaipur, Rajasthan.

Chander Shaker Yadav Research Scholar (Phy.Edu) Faculty of Physical Education, Bhupal Nobles' University, Udaipur, Rajasthan. Email: coollcsy@gmail.com

ABSTRACT

Successful team-based sports performance is usually attributed to a unique combination of gifted and trained physical, technical, tactical, and psycho - social qualities. Physical competence is defined as a set of attributes that a person possesses or develops in relation to their ability to engage in physical activity. Body composition, cardiorespiratory fitness, muscular strength, muscular endurance, flexibility, agility, balance, coordination, power, reaction time, and speed are all illustrations of measurable qualities. The current study examines the effect of various game methods on student physical competence such as speed, endurance, and flexibility. Secondary school students from Suratgarh Tehsil who participate in various games were chosen for the study. A total of 147 students were randomly assigned to one of three groups: 48 in the no-treatment group, 50 in the conventional game group, and 49 in the test of intervention effect on physical competence. The quasi-experimental research method (pre and post-test with control design) was used to study the observations. Interventions were carried out over a two-month period. For hypotheses testing, the pair sample test and ANCOVA were used. The study's major finding: There is a significant change in pre and post-test physical competence (Endurance, Speed, and Flexibility) among conventional and modern group students after treatment. The modern game improves students' endurance abilities. This treatment has an effect on endurance competence (54.4%), speed (8.9%), and flexibility (30.5%). Games are essential for physical competence and physical well-being. So, for the physical competence & physical well being games play a vital role. As a result, it must be mandatory during adolescence.

Keywords: Physical competence, Well beingness, Endurance, Speed & Flexibility.

Introduction:

Looking at modern children, one striking difference between the previous generation's childhood and the one that this generation is having is the lack of Indian or native games. Nowadays almost all kids play games like cricket, tennis and football. Nobody plays games like Kabaddi, Goli, and Ghilli or indoor games like the Dhaayakattam, Paramapadham, Pallanguzhi, Paandi or Aadu Puli Aattam. These games have a rich

culture and heritage value and were tools for passing on some ancestral knowledge or the other.

Traditional Games were not just games; they were designed to develop a lot of skills like logical thinking, building strategy, concentration, basic mathematics, aiming, and a lot more. Nowadays, we develop these skills by paying money to centres that conduct personal development courses. Traditional Games act as learning aids. They teach us many things while playing, like learning to win and lose, develop sensory skills, count, add, improve motor skills, identify colour, improve hand-eye coordination and finally to have fun, naturally, one plays or watches a game to have fun.

It can assume with a fair amount of certainty that children worldwide share one common passion – they love playing games, be it traditional or contemporary. In most societies, traditional games are the backbone of a community. However, most of the conventional games and sports, expressions of indigenous cultures and ways of life contributing to the standard indent of humanity, have already disappeared, and those that have survived to threatened by imminent disappearance and extinction under the combined effect of globalization and harmonization of the rich diversity of world sports heritage. A sport consists of physical activity or skill carried out with a recreational purpose: for competition, for self-enjoyment, to attain excellence, for the development of a skill, or some combination of these. During the Rig - Veda, Ramayana and Mahabharata eras, men of a certain stature expect to be well-versed in chariot racing, archery, military stratagems, swimming, wrestling and hunting. Excavations at Harappa and Mohenjodaro confirm that during the Indus valley civilization (2500 - 1550 B.C), the weapons involved in war and hunting exercises included the bow and arrow, the dagger, the axe and the mace.

ENDURANCE

Endurance is a very important ability in sports. But at the same time, it is an ability the importance which is often overlooked in several sports. Endurance is the product of all psychic and physical organs and systems. No other motor ability depends so much on the working capacity of the complete psycho-physical apparatus of humans as endurance. Endurance, like strength, is a conditional ability. It is primarily determined by energy liberation processes. The ability of the human body to maintain a certain level of energy production forms the physiological basis of endurance. Due to its high importance for health and training and competition and also due to its physiological determinants, which can be relatively easily studied, it is an ability which has been studied in great detail and depth by the physiologists, Endurance is directly or indirectly of high importance in all sports. It is however not easy to define endurance. Nabatnikowa (1976) brings this into focus by presenting definitions given by several experts. Disagreement among experts is much more regarding the definition of different types of endurance e.g., special endurance, speed endurance, strength endurance etc. But there is an agreement regarding the following aspects of endurance: It relates to doing work for a long time or period. It relates to working under fatigue conditions. It involves a large number of muscles. It involves work efficiency. Harre (1986) defines endurance as the ability to

resist fatigue. Thiess and Schnabel (1987) also define endurance as the resistance ability to fatigue. Martin (1979) and Matweyew (1981) have also used the concept of the ability to resist fatigue for defining endurance. Endurance refers to the ability to perform work of a given intensity over a while and is sometimes called 'stamina'. The main factor which limits and at the same time affects performance is fatigue. An athlete is considered to have good endurance when he does not easily fatigue or can continue to perform in a state of fatigue. For the physical competence speed is the second important factor:

SPEED

Speed is the capacity to travel or move very quickly. Like all the components of fitness, speed can be broken down into different types. It may mean the whole body moving at maximal running speed, as in the sprinter. It may involve optimal speed, such as the controlled speed in the approach run of the jumping events. Or, it may include the speed of a limb, such as the throwing arm in the shot or discus, or the take-off leg in the jumps. Speed, like strength and endurance, is a conditional ability. It has a complex nature as it depends to a considerable extent on the central nervous system. Due to this fact, the exact nature of speed abilities is difficult to discover and understand. Moreover, because we can influence the functioning of the central nervous system only to a very limited extent, therefore, speed performances can not be improved to a significant extent as is the case in strength and endurance. Besides because of the high role of co-coordinative processes in a speed performance the improvement of speed has to be done with specific means and methods. Speed ability should not be equated with mechanical speed which is equal to the distance covered per unit of time. In several sports actions, no distance is covered at all. Speed ability primarily signifies the ability to execute motor movements with high speed. This is cyclic acrylic in nature. Thiess and Schnabel (1987) give the following definition of speed: "It is the performance prerequisite to do actions under given conditions (movement task, external factors, individual prerequisites) in a minimum of time". Despite the complex and specific rapturised low trainability, speed ability is of high importance in all sports. Speed is used in sports for such muscle reactions (motor movements) that are characterised by maximally quick alteration of contraction and relaxation of muscles. It is also the ability to execute motor actions, under given conditions, in the minimum possible time. Flexibility is also a factor of physical competence. It is a fundamental ability to judge the potential in sportsmanship.

FLEXIBILITY

Flexibility is commonly described as the range of motion for movement, (ROM) around a particular joint or set of joints. In layman's terms; how far we can reach and turn when improving flexibility is the goal, the muscles and their fascia (sheath) should be the Major focus of flexibility training. while bones, joints, ligaments, tendons, and skin does contribute to overall flexibility, we have limited control over these factors. (brad walker, 2013) There are two types of flexibility. The first, static flexibility, relates to the range of motion of a joint with no emphasis on speed (Alter, 2004). The limits of a person's static flexibility are determined by his or her tolerance to the stretched position (Knudson,

Magnusson, & McHugh, 2000). The second, dynamic flexibility, refers to the ability to use a range of joint movements in the performance of physical activity at a normal or rapid speed (Alter, 2004). Dynamic flexibility exercises are commonly used in sport-specific movements. Dynamic flexibility does not involve a bouncing-type movement, which is characteristic of a ballistic stretch, but rather a controlled elongation of a specific muscle group (Faigenbaum & McFarland, 2007). (Ayers & Sariscsany, 2011). Flexibility is the ability to perform joint actions through a wide range of motion. The natural range of motion of each joint in the body depends on the arrangement of tendons, ligaments, connective tissue and muscles. The limit to a joint's range of motion is called the 'end position'. Injuries can occur when a limb or muscle is forced beyond its normal limits. Flexibility training may not reduce the risk of injury by gradually increasing a joint's range of motion but may help to express power through the optimal range of motion. Restricted flexibility is one of the common causes of poor technique and performance. Poor flexibility can also hinder running speed and endurance since the muscles have to work harder to overcome the resistance to an efficient stride length. Flexibility tends to decrease as we get older, while females are usually more flexible at all ages. Young athletes should do regular individualised stretching programmes to develop flexibility where it is needed and maintain existing flexibility.

Justification of the study:

This is an investigation of finding out the difference between students' physical activities and their sports spirit. At present, our students are taking interest in various types of games like mobile gaming, indoor games, conventional sports, and modern sports and other handsome students are not taking any interest in games. The researcher has a question in his mind that there are any differences in physical competence: Speed, Endurance & Flexibility among students who participated in various games. Because physical competence has a major role in sportsmanship. Without this competence can't imagine sportsmanship.

The problem of the study:

Sportsmanship is synonymous with physical competence but may differ in various types of sports. The focus of the research paper finds out the difference in physical competence of various game students. So, the researcher decided the study: Effect of Various Games on Physical Competence of School Students

The objective of the Study:

- 1). To study and compare the mean scores of pre and post-test Physical competence of no treatment group students.
- 2). To study and compare the mean scores of pre and post-test of Physical competence of conventional group students.
- 3). To study and compare the mean scores of pre and post-test of Physical competence of modern students.

4). To study and compare the adjusted mean of post-test scores of all three groups with considering the physical competence covariate.

The hypothesis of the Study:

H₀ 1 = There is no significant difference in pre-and post-score of physical competence among no treatment group students.

H₀ 2 = There is no significant difference in pre-and post-score of physical competence among conventional games group students.

H₀ 3 = There is no significant difference in the pre-and post-score of physical competence among modern games group students.

H₀ 4 = There is no significant difference in the adjusted mean score of physical competence of the control group, conventional groups and modern groups by considering pre scores of physical competence as a covariate.

Research Method:

Based on nature study and population, the Quasi-Experimental research (Pre and post-test with control design method) method is used for the observation & data collection.

The population of the Study:

The Adolescent sportsmen are the targeted population. The study is demographically conducted in Suratgarh Tehsil in Ganganagar District of Rajasthan.

Sample:

147 students of secondary level schools are selected for the conduct of the study in three schools. One school is a rural setup, two are in an urban setup. Age groups of sample boys (12 to 19 years) are studying in the 7th to 12th class. 60 students are from rural areas and 234 students are from urban areas. Groups are divided into three parts: 48,50,49 students for no treatment group (Control), convention games, and modern games.

Procedure: Pre and post-test with control design method is used for experimental research design. Intervention for the treatment is games (Modern & convention) regularly for two months. After the treatment post-test was conducted.

Instruments of Measurements: In the present study, the researcher used three methods to measure physical competencies:

Test of Endurance: The 12-minute run fitness test was developed by Kenneth Cooper, MD, in 19681 as an easy way to measure aerobic fitness and provide an estimate of VO₂ max for military personnel. The Cooper test, as it's also known, is still used today as a field test for determining aerobic fitness. The Cooper 12-minute run test requires the person being tested to run or walk as far as possible in 12 minutes. The objective of the test is to measure the maximum distance covered by the individual during the 12-minute

period¹ and is usually carried out on a running track by placing cones at various distances to enable measuring of the distance.

Test of Speed: The test involves running a single maximum sprint over a set distance, with time recorded. After a standardized warm-up, the test is conducted over a certain distance, such as 10, 20, 40 and/or 50 meters or yards, depending on the sport and what you are trying to measure.

Sit and Reach Flexibility Test

This sit and reach test is a common measure of flexibility, and specifically measures the flexibility of the lower back and hamstring muscles. This test is important because tightness in this area is implicated in lumbar lordosis, forward pelvic tilt and lower back pain. This test was first described by Wells and Dillon (1952) and is now widely used as a general test of flexibility. **Equipment required:** sit and reach box (or a ruler can be used, and a step or box). This test involves sitting on the floor with legs stretched out straight ahead. Shoes should be removed. The soles of the feet are placed flat against the box. Both knees should be locked and pressed flat to the floor - the tester may assist by holding them down. With the palms facing downwards, and the hands on top of each other or side by side, the subject reaches forward along the measuring line as far as possible. The score is recorded to the nearest centimetre or a half-inch as the distance reached by the hand. Some test versions use the level of the feet as the zero mark, while others have the zero mark 9 inches before the feet.

Statistical techniques for hypotheses testing:

Mean, SD, Std Error of Mean, Pair Sample t-test and ANCOVA are used for the hypotheses testing. And for the significance level is 0.05 is used for the hypothesis test.

Interpretation and Analysis of Data:

H₀ 1 (A) = There is no significant difference in the pre-and post-score of physical competence among no treatment group students.

Table No. 1_The following table has to Mean, Std. Deviation and Std. error mean of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among no treatment group students.

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|------------------|---------|----|----------------|-----------------|
| Pair 1 | Endurance | 1933.88 | 48 | 254.67 | 36.76 |
| | Post Endurance | 1906.49 | 48 | 277.93 | 40.12 |
| Pair 2 | Speed | 14.19 | 48 | 0.98 | 0.14 |
| | Post Speed | 14.04 | 48 | 1.05 | 0.15 |
| Pair 3 | Flexibility | 7.00 | 48 | 9.34 | 1.35 |
| | Post Flexibility | 6.95 | 48 | 9.58 | 1.38 |

In the above table: 1 the mean score of endurances pre and post-test among no treatment (Control group) are 1933.88, 1906.49, Std. deviation of endurance: 254.67, 277.93 with std. error mean: 36.76 & 40.12. In the second pair of physical competence, the mean score of speeds pre and post-test among no treatment (Control group) are 14.19, 14.04, Std. deviation of speed: 0.98, 1.05 with std. error mean:0.14&0.15. at the end pair of physical competence, the mean score of flexibility pre and post-test among no treatment (Control group) are 7.00, 6.95, Std. deviation of flexibility: 9.34, 9.58 with std. error mean 1.35&1.38.

Table No. 2_The following table has correlations of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among no treatment group students.

Paired Samples Correlations

| | | N | Correlation | Sig. |
|--------|--------------------------------|----|-------------|------|
| Pair 1 | Endurance & Post Endurance | 48 | .857** | .000 |
| Pair 2 | Speed & Post Speed | 48 | .755** | .000 |
| Pair 3 | Flexibility & Post Flexibility | 48 | .964** | .000 |

In the above table: 2 the correlations of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among no treatment group students have shown as:0.857**, 0.755** and 0.964**. P-values of these scores are found less than 0.05 level of significance. Therefore, the correlation coefficients were significant, which meant that pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among no treatment group students were found positive highly correlated.

Table No. 3_The following table has the mean difference, Std. Deviation difference, Std. error mean difference t-value with sig. (2-tailed) the p-value of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among no treatment group students.

| Pair | Comparison Scores | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|--------|--------------------------------|-------|----------------|-----------------|------|----|-----------------|
| Pair 1 | Endurance - Post Endurance | 27.39 | 143.96 | 20.78 | 1.32 | 47 | 0.19 |
| Pair 2 | Speed - Post Speed | 0.15 | 0.71 | 0.10 | 1.46 | 47 | 0.15 |
| Pair 3 | Flexibility - Post Flexibility | 0.05 | 2.57 | 0.37 | 0.15 | 47 | 0.88 |

In above table: 3 the pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among no treatment group students, mean difference: 27.39, 0.15, 0.05 are not significant at a 0.05 level of significance, because p-values of physical

competences (Endurance, Speed and Flexibility): (0.19,0.15, 0.88 > 0.05) are found more than 0.05 level of significance. (De Winter, 2013)

Therefore, the above null hypothesis, there is no significant difference in the pre- and post-score of physical competence among no treatment group students is not rejected. It's revealed that there is no significant difference in pre-and post-score of physical competence (Endurance, Speed and Flexibility) among no treatment group students. After the mean observation in table 1 means of pre and post-test seemed different but not significantly different. There is no major change in pre and post-test of physical competence (Endurance, Speed and Flexibility) among no treatment group students.

H₀ 2 = There is no significant difference in the pre-and post-score of physical competence among conventional group students.

Table No. 4_The following table has to Mean, Std. Deviation and Std. error mean of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among conventional group students.

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|------------------|---------|----|----------------|-----------------|
| Pair 1 | Endurance | 2013.85 | 50 | 169.50 | 23.97 |
| | Post Endurance | 2258.92 | 50 | 236.44 | 33.44 |
| Pair 2 | Speed | 13.82 | 50 | 0.94 | 0.13 |
| | Post Speed | 12.99 | 50 | 1.03 | 0.15 |
| Pair 3 | Flexibility | 6.15 | 50 | 4.07 | 0.57 |
| | Post Flexibility | 7.77 | 50 | 4.31 | 0.61 |

In the above table:4, the mean score of endurance pre and post-test among conventional games are 2013.85, 2258.92, Std. deviation of endurance: 169.50, 236.44 with std. error mean: 23.97 & 33.44. In the second pair of physical competence, the mean score of speed pre and post-test among conventional games are 13.82, 12.99, Std. deviation of speed: 0.94, 1.03 with std. error mean:0.13 & 0.15. at the end pair of physical competence, the mean score of flexibility pre and post-test among conventional games is 6.15, 7.77, Std. deviation of flexibility: 4.07, 4.31 with std. error mean: 0.57&0.61.

Table No. 5_The following table has correlations of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among conventional group students.

Paired Samples Correlations

| | | N | Correlation | Sig. |
|--------|--------------------------------|----|-------------|------|
| Pair 1 | Endurance & Post Endurance | 50 | 0.32** | .002 |
| Pair 2 | Speed & Post Speed | 50 | 0.85** | .000 |
| Pair 3 | Flexibility & Post Flexibility | 50 | 0.68** | .000 |

In the above table: 5 the correlations of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among conventional group students have shown as:0.32**, 0.85** and 0.68**. P-values of these scores are found less than 0.05 level of significance. Therefore, the correlation coefficients were significant, which meant that pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among conventional game group students were found positive and highly correlated.

Table No. 6_The following table has the mean difference, Std. Deviation difference, Std. error mean difference t-value with sig. (2-tailed) the p-value of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among conventional group students.

| Pair | Comparison Scores | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|--------|--------------------------------|--------|----------------|-----------------|-------|----|-----------------|
| Pair 1 | Endurance - Post Endurance | 245.06 | 242.36 | 34.27 | 7.15 | 49 | 0.00 |
| Pair 2 | Speed - Post Speed | 0.83 | 0.55 | 0.08 | 10.59 | 49 | 0.00 |
| Pair 3 | Flexibility - Post Flexibility | 1.62 | 3.36 | 0.47 | 3.42 | 49 | 0.00 |

In above table: 6 the pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among conventional group students, mean differences: of 245.06, 0.83, and 1.62 are significant at a 0.05 level of significance because p-values of physical competencies (Endurance, Speed and Flexibility): (0.00,0.00, 0.00 < 0.05) are found less than 0.05 level of significance. (De Winter, 2013)

Therefore, the above null hypothesis, there is no significant difference in pre-and post-score of physical competence among conventional group students is rejected. It is revealed that there is a significant difference in pre-and post-score of physical competence (Endurance, Speed and Flexibility) among conventional game group students. After the mean observation in table 4, the mean of pre and post-test seemed significantly different. There is a major change in pre and post-test physical competence (Endurance, Speed and Flexibility) among conventional group students after the treatment. It reflected the effect of conventional games on physical competence among students.

$H_0 3$ = There is no significant difference in the pre-and post-score of Physical competence among modern group students.

Table No. 7_The following table has to Mean, Std. Deviation and Std. error mean of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among modern game group students.

Paired Samples Statistics

| | | Mean | N | Std. Deviation | Std. Error Mean |
|--------|------------------|---------|----|----------------|-----------------|
| Pair 1 | Endurance | 1978.04 | 49 | 362.59 | 51.80 |
| | Post Endurance | 2400.73 | 49 | 153.54 | 21.93 |
| Pair 2 | Speed | 14.11 | 49 | 1.33 | 0.19 |
| | Post Speed | 12.97 | 49 | 1.35 | 0.19 |
| Pair 3 | Flexibility | 7.88 | 49 | 5.27 | 0.75 |
| | Post Flexibility | 9.52 | 49 | 5.71 | 0.82 |

In the above table: 7 the mean score of endurance pre and post-test among modern games are 1978.04, 2400.73, Std. deviation of endurance: 362.59, 153.54 with std. error mean: 51.80 & 21.93. In the second pair of physical competence, the mean score of speed pre and post-test among modern games are 14.11, 12.97, Std. deviation of speed: 1.33, 1.35 with std. error mean:0.19 & 0.19. at the end pair of physical competence, the mean score of flexibility pre and post-test among modern games are 7.88, 9.52, Std. deviation of flexibility: 5.27, 5.71 with std. error mean: 0.75&0.82.

Table No. 8 The following table has correlations of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among modern game group students.

Paired Samples Correlations

| | | N | Correlation | Sig. |
|--------|--------------------------------|----|-------------|------|
| Pair 1 | Endurance & Post Endurance | 49 | 0.59** | 0.00 |
| Pair 2 | Speed & Post Speed | 49 | 0.87** | 0.00 |
| Pair 3 | Flexibility & Post Flexibility | 49 | 0.97** | 0.00 |

In the above table: 8 the correlations of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among modern group students have shown as:0.59**, 0.87** and 0.97**. P-values of these scores are found less than 0.05 level of significance. Therefore, the correlation coefficients were significant, which meant that pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among modern game group students were found positive and highly correlated.

Table No. 9 The following table has the mean difference, Std. Deviation difference, Std. error mean difference t-value with sig. (2-tailed) the p-value of pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among modern game group students.

| Pair | Comparison Scores | Mean | Std. Deviation | Std. Error Mean | t | df | Sig. (2-tailed) |
|--------|----------------------------|--------|----------------|-----------------|-------|----|-----------------|
| Pair 1 | Endurance - Post Endurance | 422.68 | 298.55 | 42.65 | 9.91 | 49 | 0.00 |
| Pair 2 | Speed - Post Speed | 1.14 | 0.68 | 0.10 | 11.72 | 49 | 0.00 |

| | | | | | | | |
|-----------|-----------------------------------|------|------|------|------|----|------|
| Pair 3 | Flexibility - Post Flexibility | 1.64 | 1.33 | 0.19 | 8.63 | 49 | 0.00 |
|-----------|-----------------------------------|------|------|------|------|----|------|

In above table: 9 the pre-and post-scores of physical competencies (Endurance, Speed and Flexibility) among modern game group students, mean difference: 422.68, 1.14, 1.64 are significant at a 0.05 level of significance because p-values of physical competencies (Endurance, Speed and Flexibility): (0.00,0.00, 0.00 < 0.05) are found less than 0.05 level of significance. (De Winter, 2013)

Therefore, the above null hypothesis, there is no significant difference in pre-and post-score of physical competence among modern group students is rejected. It is revealed that there is a significant difference in pre-and post-score of physical competence (Endurance, Speed and Flexibility) among modern group students. After the mean observation in table 7, the mean of pre and post-test seemed significantly different. There is a major change in pre and post-test physical competence (Endurance, Speed and Flexibility) among modern group students after the treatment. It reflected the effect of modern games on physical competence among students. It is discussed in further analysis in the next section.

H₀₄. = There is no significant difference in the adjusted mean score of physical competence's dimension: endurance of control group, conventional groups and modern groups by considering pre scores of physical competence as a covariate.

Table No. 10

Descriptive Statistics of endurance among control groups, conventional groups and modern groups

| Intervention Group | Mean | Std. Deviation | N |
|--------------------|------------------|------------------|------------|
| No Treatment | 1832.4977 | 314.39818 | 48 |
| Conventional | 2258.9152 | 236.43804 | 50 |
| Modern | 2400.7280 | 153.54267 | 49 |
| Total | 2166.9478 | 341.09682 | 147 |

Table 10 has shown the mean score with Std. Deviation of physical competence's dimension: endurance of control group (48), conventional groups (50) and modern groups (49). The mean score of all groups is as a control group: 1832.50, conventional group:2258.92 & Modern game: 2400.73. Std. Deviation of physical competence's dimension: endurance of control group, conventional group, and modern group are 314.40, 236.44 & 153.54.

Table No. 11

Tests of Between-Subjects Effects

Dependent Variable: Post Endurance

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
|-----------------|---------------------------|-----|-------------|--------|------|---------------------|
| Corrected Model | 10543651.908 ^a | 3 | 3514550.64 | 78.00 | .000 | .621 |
| Intercept | 4557667.830 | 1 | 4557667.83 | 101.16 | .000 | .414 |
| Endurance | 2073617.333 | 1 | 2073617.33 | 46.02 | .000 | .243 |
| Group | 7674102.374 | 2 | 3837051.19 | 85.16 | .000 | .544 |
| Error | 6443016.124 | 143 | 45056.06 | | | |
| Total | 707249066.313 | 147 | | | | |
| Corrected Total | 16986668.032 | 146 | | | | |

In above table 11 has shown the mean square, F value with sig. (p-value) with Partial Eta squared of physical competence's dimension: endurance among the control group, conventional group, and modern group. In the fix/corrected model the F=78.00 is found significant because the p-value (sig.) is less than the 0.05 level of significance. So null hypothesis is rejected & revealed that there is a significant interaction effect among the control group, conventional group, and modern group. It meant that the mean difference is significant as following table no. 12.

Table No. 12
Pairwise Comparisons
Dependent Variable: Post Endurance

| (I) Intervention Group | (J) Intervention Group | Mean Difference (I-J) | Std. Error | Sig. ^b |
|------------------------|------------------------|-----------------------|------------|-------------------|
| No Treatment | Conventional | -391.320* | 43.204 | .000 |
| | Modern | -548.847* | 43.201 | .000 |

In above table 12. the mean difference in post-test of Endurance between the control and Conventional group 391.320 is found significant based on Sig. p 0.000<0.05. It declared that there is a difference in the mean of control and Conventional group Endurance scores. The observation of table no. 10 has shown that the mean of Endurance in the Conventional group (2258.92) is greater than the control group (No treatment) mean (1832.50). It meant that after the treatment of conventional games changed the endurance competence in students, the effect was calculated by Partial Eta Squared: .544 (Richardson, 2011). It meant that the endurance competence among students is affected by 54.4 % by conventional games. Similarly, the mean difference of 548.85 between

control and modern games is found significant. The mean of endurance competence (2400.73) is higher than the mean of the control group (1832.50). it declared that the modern game increases endurance competence among students. The endurance competence is 54.4% affected by this treatment. Modern games and conventional games developed endurance competence with no other variable.

H₀₄. (B) = There is no significant difference in the adjusted mean score of physical competence's dimension: flexibility of control group, conventional groups and modern groups by considering pre scores of physical competence as a covariate.

Table No. 13
Descriptive Statistics of flexibility among control groups, conventional groups and modern groups

| Intervention Group | Mean | Std. Deviation | N |
|--------------------|---------------|----------------|------------|
| No Treatment | 6.9454 | 9.57931 | 48 |
| Conventional | 7.7748 | 4.31245 | 50 |
| Modern | 9.5233 | 5.70649 | 49 |
| Total | 8.0868 | 6.90231 | 147 |

In above table 13. has shown that the mean score with Std. Deviation of physical competence's dimension: flexibility of control group (48), conventional groups (50) and modern groups (49). The mean score of all groups is as a control group: 6.95, conventional group:7.77 & Modern game: 9.52. Std. Deviation of physical competence's dimension: flexibility of control group, conventional group, and modern group are 9.58, 4.31 & 5.71.

Table No. 14
Tests of Between-Subjects Effects
Dependent Variable: Post Flexibility

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
|-----------------|-------------------------|-----|-------------|---------|------|---------------------|
| Corrected Model | 6015.884 ^a | 3 | 2005.295 | 305.118 | .000 | .865 |
| Intercept | 114.671 | 1 | 114.671 | 17.448 | .000 | .109 |
| Flexibility | 5847.376 | 1 | 5847.376 | 889.713 | .000 | .862 |
| Group | 92.306 | 2 | 46.153 | 7.022 | .001 | .089 |
| Error | 939.825 | 143 | 6.572 | | | |
| Total | 16568.977 | 147 | | | | |
| Corrected Total | 6955.709 | 146 | | | | |

Table 14. has shown the mean square, F value with sig. (p-value) with Partial Eta squared of physical competence's dimension: flexibility among the control group, conventional group, and modern group. Infix/corrected model the F=305.12 is found significant because the p-value (sig.) is less than the 0.05 level of significance. So null hypothesis is rejected & revealed that there is a significant interactional effect among the control group, conventional group, and modern group. It meant that the mean difference is significant as following table no. 15.

Table No. 15 Pairwise Comparisons

Dependent Variable: Post Flexibility

| (I) Intervention Group | (J) Intervention Group | Mean Difference (I-J) | Std. Error | Sig. ^b |
|------------------------|------------------------|-----------------------|------------|-------------------|
| No Treatment | Conventional | -1.651* | .519 | .002 |
| | Modern | -1.727* | .521 | .001 |

In above table 15. the mean difference in post-test of Flexibility between control and Conventional group 1.651 is found significant based on Sig. ^b 0.002<0.05. It declared that there is a difference in the mean of control and Conventional group Flexibility scores. The observation of table no. 13. has shown that the mean of Flexibility in the Conventional group (7.77) is greater than the control group (No treatment) mean (6.95). It meant that after the treatment of conventional games change the flexibility competence in students, the effect was calculated by Partial Eta Squared: .089 (Richardson, 2011). It meant that the flexibility competence among students is affected by 8.9 % by conventional games. In the same way, the mean difference of 1.73 between control and modern games is found significant. The mean of flexibility competence (9.52) is higher than the mean of the control group (6.95) it cleared that the modern game improved flexibility competence among students. The flexibility competence is 8.9% affected by this treatment. Modern games and conventional games increase the flexibility competence of no other variable. Ho4. (C) = There is no significant difference in the adjusted mean score of physical competence's dimension: speed of control group, conventional groups and modern groups by considering pre scores of physical competence as a covariate.

Table No. 16

Descriptive Statistics of speed among the control group, conventional groups and modern groups

| Intervention Group | Mean | Std. Deviation | N |
|--------------------|---------|----------------|-----|
| No Treatment | 14.0375 | 1.04767 | 48 |
| Conventional | 12.9942 | 1.02988 | 50 |
| Modern | 12.9735 | 1.34784 | 49 |
| Total | 13.3280 | 1.24596 | 147 |

In above table 16. has shown that the mean score with Std. Deviation of physical competence's dimension: speed of control group (48), conventional groups (50) and modern groups (49). The mean score of all groups is as a control group: 14.04, conventional group:12.99 & Modern game: 12.97. Std. Deviation of physical competence's dimension: speed of control group, conventional group, and modern group are 1.05, 1.03 & 1.35.

Table No. 16. Tests of Between-Subjects Effects
Dependent Variable: Post Speed

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. | Partial Eta Squared |
|-----------------|-------------------------|-----|-------------|---------|------|---------------------|
| Corrected Model | 168.588 ^a | 3 | 56.196 | 138.396 | .000 | .744 |
| Intercept | .942 | 1 | .942 | 2.320 | .130 | .016 |
| Speed | 132.695 | 1 | 132.695 | 326.794 | .000 | .696 |
| Group | 25.498 | 2 | 12.749 | 31.398 | .000 | .305 |
| Error | 58.065 | 143 | .406 | | | |
| Total | 26338.924 | 147 | | | | |
| Corrected Total | 226.653 | 146 | | | | |

Table 17. has shown the mean square, F value with sig. (p-value) with Partial Eta squared of physical competence's dimension: speed among the control group, conventional group, and modern group. Infix/corrected model the F=138.40 is found significant because the p-value (sig.) is less than the 0.05 level of significance. So null hypothesis is rejected & revealed that there is a significant interactional effect among the control group, conventional group, and modern group. It meant that the mean difference is significant as the following table no. IV.6.

Table No. 18 Pairwise Comparisons
Dependent Variable: Post Speed

| (I) Intervention Group | (J) Intervention Group | Mean Difference (I-J) | Std. Error | Sig. ^b |
|------------------------|------------------------|-----------------------|------------|-------------------|
| No Treatment | Conventional | .722* | .130 | .000 |
| | Modern | .995* | .129 | .000 |

In above table 18. the mean difference in post-test of Speed between the control and Conventional group 0.722 is found significant based on Sig.^b 0.000<0.05. It declared that there is a difference in the mean of control and Conventional group Speed scores. In the observation of table no. 16. has shown that the mean Speed in the Conventional group (12.99) is greater than the control group (No treatment) mean (14.04). It meant that after

the treatment of conventional games change the speed competence in students, the effect was calculated by Partial Eta Squared: .305 (Richardson, 2011). It meant that the speed competence among students is affected by 30.5 % by conventional games. In parallel, the mean difference of .99 between control and modern games is found significant. The mean of speed competence (12.97) is higher than the mean of the control group (14.04). It cleared that modern games increase the speed competence among students. The speed competence is 30.5% affected by this treatment. Modern games and conventional games increase speed competence with no other variable.

Findings :

1. There is a significant difference in pre-and post-score of physical competence (Endurance, Speed and Flexibility) among conventional game group students. After the mean observation in table IV.4, the mean of pre and post-test seemed significantly different. There is a major change in pre and post-test physical competence (Endurance, Speed and Flexibility) among conventional group students after the treatment. It reflected the effect of the conventional game on physical competence among students.
2. There is a significant difference in pre-and post-score of physical competence (Endurance, Speed and Flexibility) among conventional group students. After the mean observation in table IV.7, the mean of pre and post-test seemed significantly different. There is a major change in pre and post-test physical competence (Endurance, Speed and Flexibility) among modern group students after the treatment. It reflected the effect of the modern game on physical competence among students.
3. The modern game increases endurance competence among students. The endurance competence is 54.4% affected by this treatment. Modern games and conventional games developed endurance competence with no other variable.
4. The modern game improved the flexibility competence among students. The flexibility competence is 8.9% affected by this treatment. Modern games and conventional games increase the flexibility competence of no other variable.
5. Modern games increase the speed competence among students. The speed competence is 30.5% affected by this treatment. Modern games and conventional games increase speed competence with no other variable.

Implementations of the findings: It is highly accommodated that modern and conventional games are very useful & important for the game player's flexibility, endurance and speed. So, we can say that these help in improving their physical competencies.

References :

1. Alter, M. J. (2004). Science of flexibility. Human Kinetics.
2. Ayers, S. F., & Sariscsany, M. J. (2011). Physical education for lifelong fitness: the physical best teacher's guide. Human Kinetics.

3. Faigenbaum, A., & McFarland Jr, J. E. (2007). Guidelines for implementing a dynamic warm-up for physical education. *Journal of Physical Education, Recreation & Dance*, 78(3), 25-28.
4. Harre, D. (1986). In: *Thoerie und Praxis der Körperkultur*, 35/1986,4, S. 282-292
Caspersen CJ, Powell KE, Christenson GM. Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. *Public Health Rep.* 1985;100(2):126–31.
5. Knudson, D. V., Magnusson, P., & McHugh, M. (2000). *Current Issues in Flexibility Fitness*. President's Council on Physical Fitness and Sports Research Digest.
6. Martin, B. J., Sparks, K. E., Zwillich, C. W., & Weil, J. V. (1979). Low exercise ventilation in endurance athletes. *Medicine and science in sports*, 11(2), 181-185.
7. Nabatnikova (1982). *Principals of Management of Young Sportsmen*. M. Physical Culture and Sports
8. Schnabel, G., & Thiess, G. (1987). *Leistungsfaktoren in Training und Wettkampf*. Sportverlag.
9. Walker, B. (2013). *Ultimate guide to stretching & flexibility*. Injury Fix and the Stretching Inst.
10. Wells, K.F. & Dillon, E.K. (1952). They sit and reach. A test of back and leg flexibility. *Research Quarterly*, 23. 115-118.