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## Exploration study of differentiation ability and rhythm ability of volleyball and basketball players

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### Abstract

To get the purpose of the present study thirty (30) male (15 Volleyball and 15 Basketball) subjects were selected randomly from Kurukshetra University, Kurukshetra, Haryana and Department of Physical Education, Maharshi Dayanand University, Rohtak, Haryana who have participated in inter university competition in Volleyball and Basketball. Their age ranged between 18 to 25 years. The test of Differentiation and Rhythm Ability developed by Peter Hirtz in 1958. Differentiation Ability was measure by the Backward Medicine Ball throw test and rhythm was measured by Sprint at the Given Rhythm Test. The tests were designed so that they could be administered by professional and clinicians in the field who lack specialized measurement equipment, training and resources.

To compare differentiation ability and rhythm ability among basketball and handball players independent "t-test" was employed as statistical technique at the 0.05% level of significance. Result shows that there is significant difference in differentiation ability among Volleyball and Basketball players as the obtained "t" value 2.45 is significantly higher than the tabulated "t" value 2.04 but another result shows that there is significant difference in rhythm ability among Volleyball and Basketball players as the obtained "t" value 1.41 is significantly lesser than the tabulated "t" value 2.04.

**Keywords:** Differentiation ability, rhythm ability, volleyball, basketball

### Introduction

There are seven types of coordinative abilities. There are different abilities for different games/sport. They are:

- a) **Differentiation Ability:** It is the ability to achieve a high level of fine tuning or harmony of individual movement phases and body part movements. It is a high degree of accuracy and high level of mastery over sports movements for effective application in competition. For example: In gymnastics differential ability enables highly precise and accurate movements according to given model of movement. In football harmony of feet and head counts.
- b) **Orientation Ability:** It is the ability to change the position and movements of the body in time and space in relation to a definite field of action. In gymnastics the position and the movement of head and eyes is important for orientation. In wrestling, kinesthetic sense organs assume importance, in Football vision, especially peripheral vision, is decisive.
- c) **Coupling Ability:** It is the ability to coordinate body part movements in relation to a definite goal, oriented body movement. For example: In football, the foot-movement for all control or dribbling have to be coupled with the whole body movement of running, jumping, etc. Likewise in wrestling the movements of hands, legs, trunk and head have to be successfully combined.
- d) **Reaction Ability:** It is the ability to react quickly and effectively to a signal. To a great extent it depends on sense organs, coordinative processes of CNS, decision-making, concentration and anticipation.
- e) **Balance Ability:** It is the ability to maintain balance between body movements. Both static as well as dynamic balance is important in sports.
- f) **Rhythm Ability:** It is the ability to produce a rhythm, existing in motor memory, in motor action. For example, In Gymnastics the sportsman has to perceive an external rhythm, given in the form of music and to express it in his movements. in other sports rhythm is not given from outside, the sportsman has to make use of rhythm stored in his motor memory.

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**g) Adaptation Ability:** It is the ability to adjust or completely change the movement programme during tire movement on the basis of changes or anticipated changes in the situation. The situational changes may be expected ones or may suddenly take place. It depends heavily on experience.

The twenty first century is the most rapidly changing century of all time. Rapidity of changes created unusual demands on individuals and on system of education. Today education must not only include the body and knowledge, but also to develop inquiring minds that will enable them to comprehend and accept what is to come tomorrow. As Jacks, the British philosopher, puts it, living becomes an art only, "when work and play, labour and leisure, mind and body, education and recreation, are governed by a single vision of excellence and a continuous passion for achieving it. In different sports requirement of coordinative abilities are different and these abilities ensures higher movement efficiency and movement economy, whereas in some sports events they helps in higher movement frequency with high explosiveness and force application.

### Material and Methods

To get the purpose of this study thirty (30) male (15 Volleyball and 15 Basketball) subjects were selected randomly from Kurukshetra University, Kurukshetra, Haryana and Department of Physical Education, Maharshi Dayanand University, Rohtak, Haryana, who have participated in inter university competition in Volleyball and Basketball. Their age ranged between 18 to 25 years. For the better result and convenience of the researcher the test of Differentiation Ability and

Rhythm Ability developed by Peter Hirtz in 1958, administered by scholar in Institute of Professional Studies and Jiwaji University, Gwalior, (M.P.). Differentiation Ability was measure by the Backward Medicine Ball throw test and rhythm was measured by Sprint at the Given Rhythm Test. In order to compare differentiation ability and rhythm ability among Volleyball and Basketball players independent "t-test" was employed as statistical technique at the 0.05% level of significance.

**Table 1:** Descriptive Analysis of Differentiation Ability of Volleyball and Basketball Players

| Groups     | Maximum | Minimum | Range | Mean  | S.D. |
|------------|---------|---------|-------|-------|------|
| Volleyball | 19      | 10      | 9     | 13.60 | 2.61 |
| Basketball | 19      | 6       | 13    | 10.73 | 3.69 |

S.D. = Standard Deviation.

Table 1 shows that the descriptive value of maximum, minimum, range, mean, and standard deviation of differentiation ability of Volleyball Group are 19, 10, 9, 13.6, and 2.61 respectively and for Basketball group are 19, 6, 13, 10.73 and 3.69 respectively.

**Table 2:** Comparison of Differentiation Ability for Volleyball and Basketball Players

| Players    | Mean  | S.D. | M.D. | S.E. | "t" ratio |
|------------|-------|------|------|------|-----------|
| Volleyball | 13.6  | 2.61 |      |      |           |
| Basketball | 10.73 | 3.69 | 2.87 | 1.17 | 2.45*     |

\*Significant at 0.05% level of significance,  $t(28)(0.05) = 2.04$

S.D. = Standard Deviation, M.D. = Mean Deviation, S.E. = Standard Error

### Results

Table 2 shows that there is significant difference in differentiation ability among Volleyball and Basketball players as the obtained "t" value 2.45 is significantly higher than the tabulated "t" value 2.04 at the 0.05 level of significance.

**Table 3:** Descriptive Analysis of Rhythm Ability of Volleyball and Basketball Players

| Groups     | Maximum | Minimum | Range | Mean | S.D. |
|------------|---------|---------|-------|------|------|
| Volleyball | 2.28    | 0.21    | 2.07  | 1.50 | 0.56 |
| Basketball | 1.89    | 0.45    | 1.44  | 1.25 | 0.41 |

Table 3 shows that the descriptive value of maximum, minimum, range, mean, and standard deviation of rhythm ability of Volleyball group are 2.28, 0.21, 2.07, 1.50, and 0.56 and respectively and for Basketball group are 1.89, .45, 1.44, 1.25, and 0.41 respectively.

**Table 4:** Comparison of Rhythm Ability for Volleyball and Basketball Players

| Groups     | Mean | S.D. | M.D. | S.E. | "t" ratio |
|------------|------|------|------|------|-----------|
| Volleyball | 1.50 | 0.56 |      |      |           |
| Basketball | 1.25 | 0.41 | 0.18 | 0.25 | 1.41*     |

\* Significant at 0.05% level of significance,  $t(28)(0.05) = 2.04$

S.D. = Standard Deviation, M.D. = Mean Deviation, S.E. = Standard Error

### Results

Table 4 shows that there is significant difference in rhythm ability among Volleyball and Basketball players as the obtained "t" value 1.41 is significantly lesser than the tabulated "t" value 2.04 at the 0.05 level of significance.

### Findings

Findings of this study show that there is significant difference among basketball and handball players in the means of differentiation ability. This may be because of the variability in the accuracy of shooting are different in both the sports specifically or it may be the control over the ball by the players.

Findings of the variable show that there is no significant difference in basketball and handball players in the means of differentiation ability. This may be due to the activity namely dribbling, passing etc., are the similar type of activity in both of the sports.

### Conclusion

Findings of the study show that there is significant difference among Volleyball and Basketball players in the means of differentiation ability. Many studies are conducted on the same variables and selected subjects in past and the findings shows that differentiation ability is vary in these both sports because of the nature of the activity. In case of rhythm ability no significance difference was found among Volleyball and Basketball players because of similar kind of skills which is used in Volleyball and Basketball.

### References

- Gangopadhyay SR. Sports Psychology, Sports Publication, New Delhi, 2005.
- Barry R, Cohn J, Rick Barry's. Pro Basketball Bible: 1994 -95 Edition. Basketball Books Ltd: Marina Del Rey, CA, 1994.

3. Anna, Espenschade, Dable Robert R. "Dynamic Balance in Adolescent Boys," *Research Quarterly* 24 (October 1953).
4. Archita Koley. "Relationship of Coordinative Abilities to Sprinting Performance in Sprinters" (Unpublished Master Degree Thesis, L.N.I.P.E. April 1999).
5. Hardayal Singh. *Science of Sports Training*, D.V.S. Publication, New Delhi.
6. Barry Kerr A. "Relationship between Speed of Reaction Time and Movement in Knee Extension Movement," *Research Quarterly* 37 (March 1966).
7. Broussard, Official NBA Guide. *The Sporting News Publishing Company: Saint Louis, Carter C (eds), 1997.*
8. Clair Jennet W. "An Investigation of Tests of Agility," *Completed Research in Health, Physical Education and Recreation* 2, 1960.
9. Czerwinski J. "The Influence of Technical Abilities of Players on the Tactical Selection in the Basketball game." *EHF Periodical*, 2, 1995.
10. Hammel Slater AT. "Comparison of Reaction Time Measures to a Visual Stimulus and Arm movement," *Research Quarterly* 26 (December, 1995).
11. Gouranga Sarkar. "Relationship of coordinative abilities to shooting performance in Soccer" (Unpublished Master Degree Thesis in L.N.I.P.E. 1999).