

Relationship of coordinative ability with the skills of basketball

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Abstract

Coordinative abilities are considered to be an important prerequisite in learning as well as achieving efficiency in sports skills. The thrust of the present research was to find out the relationship of coordinative abilities with the sports skills of basketball specifically. Thirty basketball players of Amity University of university level were selected as the participant of the study. Coordinative abilities namely, orientation ability, differentiation ability, balance ability, rhythmic ability, reaction ability and basketball skills e.g., Basketball field goal speed, Basketball throw for accuracy and dribbling ability were assessed with the help of standardised tests, Peter Hirtz test and Johnson Basketball Test respectively. Relationship of the coordinative ability with the basketball skills was computed with the help of Pearson product moment correlation coefficient. Finding of the study revealed that the orientation ability and differentiation ability are significantly correlated with the basketball field goal speed and basketball throw correspondingly. Rest of the other coordinative abilities e.g. balance ability, rhythmic ability, reaction ability are not significantly correlated with the basketball skills. Findings of the study will be helpful to the coaches, players and trainers in implementing the training and development of the players.

Keywords: Coordinative ability, Basketball skills

1. Introduction

Coordination is considered to be one of the most important ability in term of sports performance. Coordination is actually part and parcel of every fundamental motor movement coordinative ability enables a person to perform a movement and group of movements with better quality and effects, when we look at the coordinative abilities in relation of sport performance it has found an important place in competition and performance.

Sports are one of the most complex activities and it is based on a great diversity of movement. That's why different sports activities require different types of coordinative abilities. The coordinative abilities are seven abilities i.e. Orientation, Differentiation, Rhythm, Balance, Reaction, Coupling and Adaptation ability. Orientation is the ability of a person to be aware of his or her position with respect to time, place and circumstantial situation. All coordinative abilities are important to perform at top levels in competitive sports especially in ball games Sports performance and its relationship with coordinative abilities were assessed by many researches in many sports e.g. Basketball, football, badminton, kabaddi cricket etc. Singh (2016) [8]; Rana & Rajpoot (2015). Collectively It was concluded from these studies found that the coordinative abilities have relationship with sports skills and performance level. On the basis of literature and personal experience of scholar and point of view of expert it is found that coordination abilities and basketball skill have a relationship in term of performance. There are numerous studies which have investigated the relationship between basketball skill and coordinative ability. In the Indian context there are very few studies have been conducted on this aspect. To fill the gap in the literature and to find out the significant of relationship of coordinative ability with basketball skills present study have been taken up.

2. Materials and methods

2.1 Objectives of the Study

1. The objective of the study is to assess the coordinative abilities of the basketball players.
2. The objective of the study is to analysis the sports skills of the basketball players.
3. The objective of the study is to find out the relationship of coordinative ability with sports skills of basketball players.

2.2 Selection of Participants

Participants of the study were selected with the help of purposive sampling method. For the purpose of the study 30 university level basketball players were selected purposively from Amity School of physical education and Sports sciences department, Amity University, Noida (Uttar Pradesh).

2.3 Selection of Variables

For the purpose of the study the following variables were selected:

1. Coordinative ability

- Orientation ability
- Differentiation ability
- Balance ability
- Rhythm ability
- Reaction ability

2. Basketball skills

- Field Goal Speed
- Basketball throw for accuracy
- Dribble

2.4 Criterion Measures

The component assessment includes the following:

- Orientation ability was measured by numbered medicine ball run test and was measured in 1/10 of seconds.
- Differentiation ability measured through backward medicine ball throw test and was measured in accordance with point scored by each subject.
- Balance ability measured by long nose tests and was measured by long nose tests and was measure in meters and centimetres.
- Rhythm ability assessed by sprint at given rhythm test and was measured in seconds.
- Reaction ability assessed by sprint at given rhythm test and measured in schools
- Filed goal speed was measured in seconds by maximum number of basket thrown in 30 seconds.
- Basketball throw for accuracy was measured in number of score achieved in throwing the basketball in the desired area out of ten trails.
- Dribbling ability was measured in seconds by dribbling basket around obstacles from start line to the end line in 30 seconds.

2.5. Administration of Tests and Collection of Data

The data was collected by various coordinative abilities tests as suggested by Peter Hirtz. The basketball skills and five coordinative ability tests were administered to participants at the basketball courts of Amity Sports Complex in Amity University Noida.

The necessary marking were done before the start and the scholar followed the specification required for the test. Tests were demonstrated and explanation was given to the participant by the scholar.

2.6. Statistical procedure

For analysis of data descriptive statistic was used. To find out significance of relationship between basketball and

coordinative ability person product moment correlation coefficient was computed with 0.05 level of significance.

3. Results and discussions

The data was analysed with the help of descriptive statistics. The relationship of coordinative abilities with the basketball skills was calculated with the help of Pearson correlation coefficient. findings of the study are presented in following tables

Table 1: Descriptive status of Coordinative abilities of basketball players.

Variables	Min	Max	Mean	SD	N
Orientation ability	7.1	9.4	7.9	0.57	30
Differentiation ability	5	16	10.7	3.19	
Balance ability	7.05	10.95	8.47	1.04	
Rhythmic ability	0.64	1.15	0.87	0.14	
Reaction ability	1.4	1.95	1.75	0.17	

Table 1 shows the status of coordinative abilities of basketball players The finding of the study revealed that the minimum score of Orientation ability is 7.1 in seconds and maximum score is 9.4. The mean and standard deviation of Orientation ability is 7.9 and 0.57 respectively. The finding of the study revealed that the minimum score of differentiation ability is 5 in seconds and maximum score is 16. The mean and standard deviation of differentiation ability is 10.7 and 3.19 respectively. As far as balance ability is concerned the minimum score of balance ability is 7.05 seconds and maximum score is 10.95. The mean and standard deviation of balance ability is 8.47 and 1.04 respectively. Findings of the study revealed that the minimum score of rhythmic ability is 0.64 in seconds and maximum score is 1.15. The mean and standard deviation of rhythmic ability is 0.87 and 0.14 respectively. As per the findings the minimum score of reaction ability is 1.4 in seconds and maximum score is 1.95. The mean and standard deviation of reaction ability is 1.75 and 0.17 respectively.

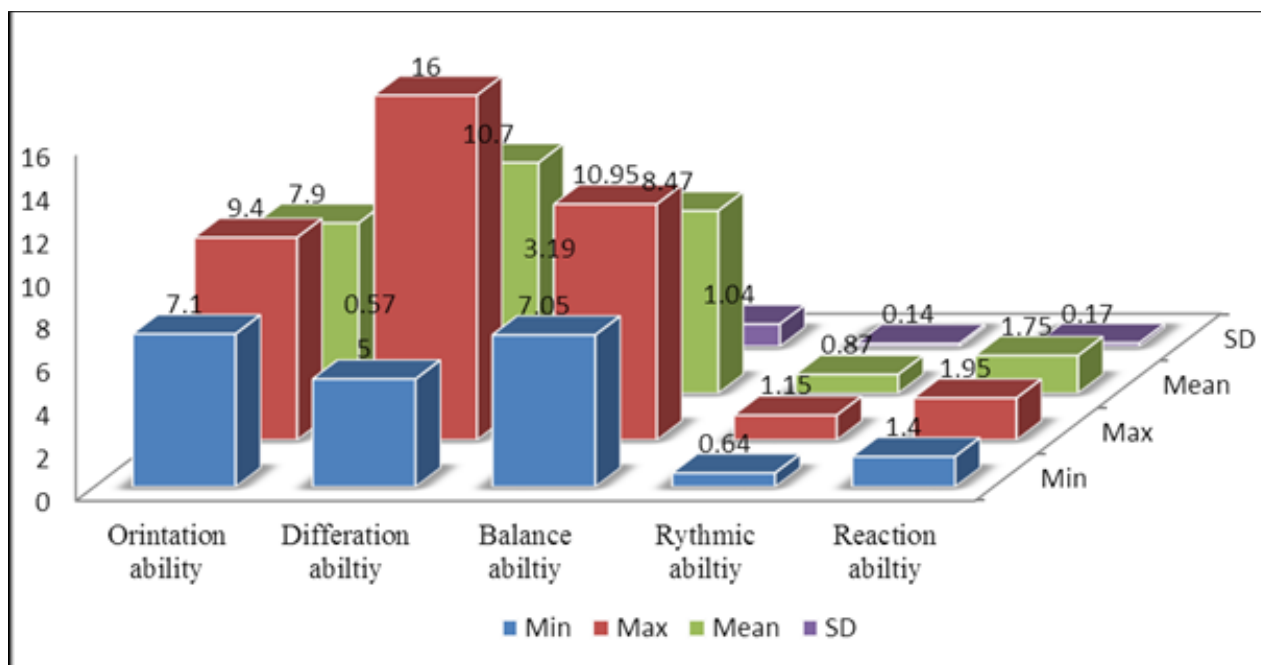


Fig 1: Descriptive status of Coordinative abilities of basketball players.

Table 2: Relationship of coordinative ability with basketball skills

Coordinative ability	Basketball skills	r (Pearson correlation coefficient)
Orientation ability	Field goal speed test (in seconds)	0.44*
	Basketball throw for accuracy (in points)	0.09**
	Basketball dribble test (in seconds)	0.02**
Differentiation ability	Field goal speed test (in seconds)	0.09**
	Basketball throw for accuracy (in points)	0.38*
	Basketball dribble test (in seconds)	0.05**
Balance ability	Field goal speed test (in seconds)	0.23**
	Basketball throw for accuracy (in points)	0.27**
	Basketball dribble test (in seconds)	0.14**
Rhythmic ability	Field goal speed test (in seconds)	0.02**
	Basketball throw for accuracy (in points)	0.02**
	Basketball dribble test (in seconds)	0.07**
Reaction ability	Field goal speed test (in seconds)	0.05**
	Basketball throw for accuracy (in points)	0.09**
	Basketball dribble test (in seconds)	0.31**

* Significant at 0.05 level ** Not significant at 0.05 level

Table 2 disclose the relationship of coordinative abilities with the basketball skills e.g., field goal speed, basketball throws for accuracy and basketball dribble test. Pearson product moment correlation coefficient is calculated to find the significant of relationship between the coordinative abilities and basketball skills. Analysis of the data revealed that the calculated value of correlation coefficient of orientation ability with basketball skill is 0.44 in the case of basketball field goal speed test, 0.09 with the basketball throwing for accuracy and 0.02 in the case of basketball dribble test. Further correlation coefficient of differentiation ability with basketball skill is 0.09 in the case of basketball field goal speed test, 0.38 with the basketball throwing for accuracy and 0.05 in the case of basketball dribble test. As far as the correlation coefficient of balance ability with basketball skill is concerned it is 0.23 in the case of basketball field goal speed test, 0.27 with the basketball throwing for accuracy and 0.14 in the case of basketball dribble test. correlation coefficient of rhythmic and reaction time with the basketball skill is 0.02 & 0.05 in the case of basketball field goal speed test, 0.02 & 0.09 with the basketball throwing for accuracy and 0.07 & 0.31 in the case of basketball dribble test The calculated value of correlation coefficient is found significant at 0.05 level in the case of orientation ability with the field goal speed test and differentiation ability with the basketball throw for accuracy. On the other hand other coordinative abilities e.g. Balance; Rhythmic and reaction ability the correlation of coefficient of relationship is found not significant at 0.05 level.

4. Discussion on findings

Some of the important skills in basketball are field goal, throw accuracy, passing and dribbling. As it is very well understood that if the player having good orientation of the space and time they can perform better sport skills. Findings of the study revealed that there is significant correlation between orientation ability and field goal speed. These findings are in line with the findings of the study conducted (Singh, 2013) [7], Where significance difference was found in the orientation ability of basketball players of different level. On the other hand, basketball throw and dribble ability was not found significant related with the orientation ability.

Differentiation ability was another essential coordinative ability to achieve perfection and economy in sports moment and skills. This ability is highly dependent on the functional ability and kinaesthetic sense. The findings of the study have revealed some relevant facts. The differentiation ability is found to be significant related with the throwing ability. These finding are supported by the study of (Singh, 2016) [8].

Finding on the other hand revealed that other coordinative abilities such as balance ability; rhythmic ability and reaction ability were not found to be significantly correlated with the basketball skills. Lack of training and less efficiency in these skills could be the reason for the same. These finding are in line with some of these studies (Nasreen, Rahman & Uppal, 2012) [5]; (Das, 2013) [2].

5. Conclusion

On the basis of findings and discussion of the study, following conclusions were drawn:

1. It is concluded that the orientation ability have significant correlation with the field goal speed. But on the other hand the orientation ability is not significantly correlated with the basketball throw and dribbling ability.
2. Differentiation ability is significantly correlated with the basketball throw but there is no significant correlation between differentiation and field goal speed. Differentiation ability is also not significantly correlated with the dribbling ability.
3. It is concluded that balance ability is not significantly correlated with the field goal speed, basketball throw and dribbling ability.
4. Rhythmic ability is not significantly correlated with the field goal speed, basketball throw and dribbling ability.
5. It is also concluded that reaction ability is not significantly correlated with the field goal speed, basketball throw and dribbling ability.

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