

Decision-making in Basketball offense tactics: Comparing mixed training based on verbal instructions

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Abstract

Introduction: Various intervention programs have been proposed to improve the quality and accuracy of athletes' decision-making. The present study aimed to compare the effectiveness of verbal instructional (VI), VI + modeling, and VI + implementation methods on female basketball players' decision-making speed and accuracy.

Methods: For this purpose, 36 female basketball players present in Iranian Basketball Premier League competitions with an average age (24.49 ± 1.7) years participated in the present study and were divided into three groups (each group=12) based on the scores of the speed and accuracy decision-making pre-test. The training phase lasted for three sessions of 15 minutes. At this stage, group 1 was given only verbal instructions, group 2 was given verbal instructions with 15 slides, and group 3 was given verbal instructions with performances on the field. A retention test was taken at the end of the last training session, post-test, and after 24 hours.

Results: The results of 3 (group) * 3 (test) mixed analysis of variance in each of the variables of speed and accuracy decision-making showed that the accuracy in the groups of VI + modeling and VI + implementation increased from pre-test to retention ($P < 0.05$) and the accuracy of VI + implementation group in post-test, and retention was higher than the VI group ($P < 0.05$). Although all groups showed an increase in speed in decision speed, no difference was observed between the groups ($P < 0.05$).

Conclusion: Therefore, coaches are advised to use the implementation method instead of instructions and modeling to teach tactics.

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Keywords


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Extended Abstract

Introduction

Skilled players, especially in team sports, are characterized by making relevant and quick decisions in an active, time-limited environment. It has been stated that adaptations for skilled people are created due to exercise that fa-

cilitates effective sports prediction and decision making. Many decisions are made based on the perception-action cycle, as well as functional constraints. Training methods in decision-making must move in a direction that is ultimately

effective in the dynamic conditions of competition. The research focused on predicting and perceiving decision-making increases, given the importance of skillful performance in sports. Various intervention programs have been proposed to improve the quality and accuracy of athletes' decision-making. Overall, the findings in evaluating the effectiveness of decision-making training interventions show that these exercises improve players' tactical skills. Educators attempt to provide information to the learner through descriptions, verbal instructions, and modeling. They are always looking for ways to convey this information in the best possible way. The instructions contain general information about the fundamental aspects of the skill that instructors usually use verbally. Also, the modeling method is one of the most influential and sustainable types of learning done through observation. The present study aimed to compare the effectiveness of verbal instructional (VI), VI + modeling, and VI + implementation methods on female basketball players' decision-making speed and accuracy.

Methods

For this purpose, 36 female basketball players present in Iranian Basketball Premier League competitions with an average age (24.49 ± 1.7) years participated in the present study and were divided into three groups (each group=12) based on the scores of the speed and accuracy decision-making pre-test. The pre-test phase consisted of 15 slides showing different arrangements of offensive and defenders. Each slide was photographed from the offense player's point of view, containing a correct answer (dribble, shot, or pass). The correct decision for each slide was determined and approved by the national team coaches

before data collection. The slides were displayed on a laptop equipped with accuracy and decision speed measuring software. Scores were based on the accuracy (maximum correct answer) and speed (minimum response time) of the participants' decision-making in choosing the answer. The training phase lasted for three sessions of 15 minutes. At this stage, group 1 was given only verbal instructions, group 2 was given verbal instructions with 15 slides, and group 3 was given verbal instructions with performances on the field. A retention test was taken at the end of the last training session, post-test, and after 24 hours. In all tests, no feedback on the correctness or incorrectness of the decision accuracy was observed. However, after each trial, this feedback was provided to the players in the training phase. It should be noted that the team coach was present with the researcher in all stages of training.

Results

One-way ANOVA test was used to examine the differences between the groups in the pre-test of accuracy and speed of decision making. The results revealed no significant difference between the groups in none of the variables of accuracy ($P=0.981$) and accuracy ($P=0.7$). The results of 3 (group)* 3 (test) mixed analysis of variance in each of the variables of speed and accuracy decision-making showed that the accuracy in the groups of VI + modeling and VI + implementation increased from pre-test to retention ($P<0.05$) and the accuracy of VI + implementation group in post-test and retention was higher than the VI group ($P<0.05$). Although all groups showed an increase in speed in decision speed no difference was observed between the groups ($P<0.05$).

Table 1. descriptive statistics from variables

Groups	Decision-making accuracy (score)			Decision-making speed (s)		
	Pre-test	Post-test	Retention	Pre-test	Post-test	Retention
Verbal instruction	9.75±2.22	8.83±2.03	10.41±1.92	76.85±26.85	57.3±16.06	57.48±16.69

Groups	Decision-making accuracy (score)			Decision-making speed (s)		
	Pre-test	Post-test	Retention	Pre-test	Post-test	Retention
VI + modeling	9.83 ± 1.94	10.91±1.2	11.58±1.62	71.60±21.23	54.95±12.78	53.64±14.19
VI + Implementation	9.66±2.14	11.5±2.15	12.25±1.6	69.16±19.61	63.09±18.05	56.72±12.82

Conclusion

Skilled players have the ability to receive the essential information from dynamic patterns during the game. The terms of the VI and the VI + modeling seem to impose restrictions on the use of related environmental cues and peripheral visibility in comparison with the terms of the VI + implementation. According to the theory of dynamic ecology, the most relevant informational constraints for decision-making and controlling action in dynamic environments are those that emerge during ongoing performer-environment interactions. Many team tactics may not be stated in verbal reports. There is an interdependence between perception and action that is different from word and action. Through physical training, players are perceptually synchronized with other players and regulate their actions by refining the behaviors of other teammates. According to dynamic ecological systems, the essential information for decision-making in dynamic environments is obtained during direct interaction between the individual and the environment, and previously stored information does not play an essential role in this regard. Restricting skilled players to explicit learning affects their potential perceptual-motor abilities gained through experience. Therefore, coaches are advised to use the implementation method instead of instructions and modeling to teach tactics.

Ethical Considerations

Compliance with ethical guidelines

In this study, written consent was obtained from the par-

ticipants, and they were assured that they could cancel at any time and for any reason that they were not able to continue participating in the study, which would have no material or moral cost to them. This article is an excerpt from the doctoral dissertation approved by the Faculty of Physical Education and Sports Sciences, University of Tehran, No. 1929.

Authors' contributions

Farnaz Zahedmanesh, presenting the preliminary research design, collecting and analyzing data, writing the initial manuscript; Elahe Arabameri, final correction and approval of the draft, and responsible author; Mehdi Shahbazi, data analysis, manuscript review, and research consultant; Shahzad Tahmasebi Boroujeni, manuscript review, and research consultant.

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Conflict of interest

The Authors declare that there is no conflict of interest.