DOI 10.14526/03_2017_229

ANALYSING THE EFFECT OF LEARNING BY SIMULATION ON THE SPEED AND ACCURACY DECISION MAKING OF VOLLEYBALL PLAYERS

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Annotation. *The purpose of this study was to verify the efficiency of learning by simulation intervention programme on the speed and accuracy on decision making of Basic Volleyball Skills (Serving, Sitting and Dig & Blocked) of 24 volleyball players.* ***Material.*** *Two intact groups of volleyball academy players participated in this study. One academy group participated in the perceptual learning simulation, which included activities, game analysis, tactical volleyball discussions, volleyball rule discussions and decision making, they were spatially and temporally occluded to provide varying amounts of information to the participant. The other academy group served as the control group and completed both the pre- and post-tests bay using "Super Lab (V 4.04) test. Our study was designed and implemented to address three aspects of decision making in Volleyball. First, speed and accuracy of decision making was assessed. In this research, Super Lab (V 4.04) test 3D basic Situation skills from Volleyball situation matches of 15 3D basic Situation skills -Multiple Object Tracking(Romeas et al., 2016; Takahashi, Ikeya, Kano, Ookubo, & Mishina, 2016) was used to identify any changes after a learning simulation programme. The participants scores on each of these variables were processed to determine if there were any significant differences from pre- to post-test performance, and if there were any significant differences between the subjects who received the perceptual learning by simulation and the subjects in the Control group.* ***Methods.*** *All data collected from all the different tests were entered in an Excel format and processed using the SPSS statistics programme and the appropriate t-tests for repeated measures, were completed to determine group differences (Table 2). The significance level for all test variables was an alpha level of 0.05. The following procedures were followed in the development and implementation of this research. The researcher decided that a computer-based test using "Super Lab (V 4.04) test 3D basic Situation skills from Volleyball situation matches would provide the necessary challenge to players' decision making and also allow a measurement of the speed and accuracy with which they made their decisions. Two different kinds of data were analyzed: Speed and Accuracy of Decision Making, As the first situation is presented on the computer screen, a timer is activated. Players will see the action up to the point where the action is "frozen". Watch and when the screen freezes players can immediately make their decision by clicking with on the keyboard eight second were done to answer quickly time and accuracy of your decision will be measured.* ***Results.*** *Results showed important improvement in the decision making by participants in both the experimental and the control groups. Both groups also indicated a significant deterioration in the accuracy of their decisions. The similarity in the post-test scores of the two groups led to the conclusion that learning simulation has affected the decision-making for the experimental group. Our results suggest different sources of visual information work collectively to facilitate player's anticipation in time-constrained sports and reinforce the complexity of player's perception. Another Suggestion is made for the design of future technique to improve decision making. The results showed a significant improvement in speed of decision making for both the experimental Group 1 and the Control group 2 (Table 3). It can also be noticed that the variability scores within each group, as indicated by the standard deviation, was less on the post-tests. The SD on the pre-test for the experimental group was 2.95s, which dropped to .90s on the post-test. The*

*SD on the pre-test for the Control group was 1.72s on the pre-test and only .83s on the post-test. This means that both groups not only became faster, but also that the subjects within each of the groups were more similar to each other in the speed of their decision making on the post-test. Between group differences showed that the subjects were not significantly different from each other, either on the pre-test or on the post-test (Table 6). The mean score for accuracy was slightly higher on the pre-test for Group 1 (experimental), but the mean score for both groups on the post-test was almost identical (2.95 correct and 2.86).**Conclusion**. We can conclude that our designed learning by simulation programme develop mutually the speed and accuracy of players' decision making which can rely on (3D) basic Situation skills and video match playing feedback, to raise declarative and technical skills Basic Volleyball Skills (Serving, Sitting and Dig & Blocked).*
Two significant differences were recorded between the experimental and the Control groups. The first was the significant improvement in speed accompanied by weakening in the accuracy of their decision making. This may be a attribute of an intermediate altitude of Volleyball skill as players push to become faster at processing information. The cost in terms of accuracy in decision making could be a task of this process. The results of the study were that the subjects who participated in the learning by simulation did achieve significant differences on the targeted outcomes, when compared to subjects from a similar Volleyball players. and we can say that the use of learning by simulations programme can bring some important changes in speed and accuracy of decision making to academy volleyball players. It was encouraging that a significantly better progress was achieved in the decision making of the subjects by the experimental group.
Keywords: *Learning, Simulation, Decision-Making, volley ball.*

Introduction

Experts represent a select group of people who stand out from their peers for the excellence with which they achieve high-level results(Afonso, Garganta, & Mesquita, 2012). Researchers investigated the effect of implicit and explicit learning methods on motor skills, decision making and anticipation skill. (Poolton, Masters, & Maxwell, 2005), Perceptual-learning skills such as anticipation and decision-making are two crucial performance determinants in volleball, where fast and correct decisions are required in a complex and different situation (Ward & Williams, 2003), it was shown that perceptual abilities of high performance athletes are fundamental perceptual and cognitive differences between experts and novices (Nimmerichter, Weber, Wirth, & Haller, 2015; Williams, Ward, Smeeton, & Allen, 2004), However, the different methods regarding anticipatory-skill learning for enhancing decision-making is inconsistent (Klostermann, Vater, Kredel, & Hossner, 2015). In fast ball sports like volleyball, decision-making skills are the most determining factor for excellent performance.(Schläppi-Lienhard & Hossner, 2015) that research aimed to identify factors that influence the decision-making process in top-level beach volleyball in order to find relevant aspects for further research. (Romeas, Guldner, & Faubert, 2016) confirmed that ability to perform a context-free 3-dimensional multiple object tracking (3D-MOT) task has been highly related to athletic performance.

The following research question guided this research: Will the perceptual learning by simulation of u/17 volleyball players be improved following participation in a 16-week programme designed to develop speed and accuracy of decision making?

Methods

Participants

A total of 24 male volleyball players were recruited. Using procedures similar to those applied by Baker(Baker, Côté, & Abernethy, 2003), Participants were divided in two Experimental Groups (EG) and Control Group(CG) consisted of 24 males (Table 1). All Participants signed an informed consent form and reported normal or corrected to normal levels of visual function. They were

free to withdraw from testing at any stage. The institution's ethics guidelines were followed.

Table 1
Players' information

	Group	N	Mean	Std. Deviation	Mean error standard
Age (years)	Experimental Group	*12*	*16,17*	*0,577*	*0,167*
	Control Group	*12*	*16,58*	*0,515*	*0,149*
Experience (years)	Experimental Group	*12*	*4.2917*	*0.83824*	*0.24198*
	Control Group	*12*	*3.8750*	*0.77239*	*0.22297*

Procedures

2-3-Data Analysis

Table 2
Plans for Data analysis

Variable	*Within Group*	*Between Groups*
Speed of Decision Making	Dependent *t*-test	Independent *t*-test
Accuracy of Decision Making	Dependent *t*-test	Independent *t*-test

Measures:

Results

Table 3
Speed of decision making: Results within groups

		n	*Mean*	*Std. Deviation*	*t*	*Sig. (2-tailed)*
Experimental Group 1 Pre-test		12	4.44s	2.95	3.476	0.002*
	Post-test	12	3.38s	0.90		
Control Group 2	***Pre-test***	12	3.76s	1.72	3.795	0.001*
	Post-test	12	2.98s	0.83		

*p = < 0.5

Table 4
Speed of decision making: Results between groups

	n	*Mean*	*Std. Deviation*	*t*	*Sig. (2-tailed)*
Group 1 Pre-test	12	4.57s	2.60	1.97	0.073
Group 2 Pre-test	12	2.95s	1.60		
Group 1 Post-test	12	3.37s	0.98	2.58	*0.040
Group 2 Post-test	12	2.96s	0.93		

*p = < 0.05

The (Table 4) show the differences that are presented between the two groups the Control group was not significantly faster on the pre-test than experimental Group 1.

However, control Group 2 was significantly faster than experimental Group 1 on the post-test. It can be noted that two subjects in Group 1 and four subjects in Group 2 did not take the post-test.

Table 5
Accuracy of decision making: Results within groups

		N	Mean/25	Std. Deviation	t	Sig. (2-tailed)
E.Group	Pre-test	12	5.60 correct	1.96	5.675	0.000*
	Post-test	12	2.95 correct	1.86		
E.Group	Pre-test	12	4.10 correct	2.30	6.254	0.000*
	Post-test	12	3.86 correct	1.90		

*p = < 0.5

The results showed a significant change in the scores for accuracy of decision making for both the experimental Group 1 and the Control group 2 (Table 5). However, the change was in becoming less accurate. In other words, the accuracy of decisions decline significantly for both groups. The mean can be interpreted as the group's average score out of 15 3D basic Situation skills test.

Table 6
Accuracy of decision making: Results between groups

		N	Mean/25	Std. Deviation	t	Sig. (2-tailed)
E.Group	Pre-test	**12**	6.20 correct	2.34	0.424	**0.793**
	Post-test	**12**	6.10 correct	1.94		
C.Group	Pre-test	**12**	3.10 correct	1.86	0.396	**0.925**
	Post-test	**12**	3.20 correct	1.70		

*p = < 0.05

Discussion

The results of the final test using Super Lab (V 4.04) test 3D of decision making speed and accuracy showed that Volleyball players in both groups became significantly faster but also became significantly less accurate. There is some supposition from literature as to what type of practice might improve decision making(Abernethy, 1996) .(Gréhaigne, Godbout, & Bouthier, 2001) showed that experts make faster decisions when predicting an opponent's (Lorains, Ball, & MacMahon, 2013) showed that Speeded video is further to have allowed elite athletes to perform more automatically, with a faster processing effectiveness. in this case reasons why speed but not accuracy of decision making significantly improved for both groups could include by the research of (Mascarenhas, Collins, & Mortimer, 2005) found that experts were not more appropriate in their decisions making, However, (Thomas, 1994) stated that accuracy in decision making can be trained and speed will improve with experience. and also associated the accuracy and speed of decision making with procedural knowledge.

The post-test speed showed that experimental group was significantly faster than that the control group it could be interpreted as a positive sign. Perhaps the learning by simulation, which may have had a effect on the acceleration in decision making speed that initially accompanies an increase in expertise.

In this case, the learning by simulation can claim to have contributed to an increase in the speed of decision making by the experimental group, since the control group did not experienced the same significant increase in speed. The learning by simulation also had a positive effect on the accuracy of decisions making, since both groups reflected similar patterns of significant decline in the accuracy of their decision making.

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Submitted: *23.07.2017*
Received: *26.07.2017*

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For citations: Merzoug D., Belkadi A., Sebbane M., Abed F., Abdedaim A. Analysing the Effect of Learning by Simulation on the Speed and accuracy Decision Making of Volleyball players, *The Russian journal of physical education and sport (pedagogico-psychological and medico-biological problems of physical culture and sports)*, 2017, Vol. 12, No.3, pp. 12-17. DOI 10.14526/03_2017_229

DOI 10.14526/03_2017_230

SIGNIFICANCE OF POST-GAME-SPECIFICITY SKILLS COACHING ON RHYTHMIC COUPLING COORDINATION CASE PLAYERS HANDBALL POSITIONS

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Annotation. *Thus, all sports require the coordination of eyes, hands and/or feet as crucial for tactical athletes. Our question based on the injury of post-game training in the development of this quality mortice. Deduced by the researcher, in the case of limbs mainly involves movements, which require the sequential and simultaneous of the both body sides, using the sensor-motor ability to organise the temporal motor responses[1]. Where the differences between individuals are defined in reaction time, time of motion[2], intelligence [3], and cognitive control as essential and decisive factors of superiority in individual dual-task coordination[4]. While in the case of collective skill the differences are related to the team's spatiotemporal behaviour, according to the similar studies[5].* ***Materials****. Through the above, our aims of this current study are to examine the consequence of Post-Game-Specific skills experiences training on income and efficiency in dual-task coordination as their relationships with interlimb coordination rhythmic case rotation as a*