

Abstract

Title of the doctoral dissertation: “The effect of learning and improving the backhand stroke accuracy in table tennis by using different training programs”

Determining the optimal program for learning and improving the technique of strokes in table tennis is a dynamic and multidimensional problem because the learning effect of movement tasks depends on the competitor’s skill level, task difficulty, and the contextual interference level. By manipulating the sequence or scheduling of exercises the learner is consistently changing the level of contextual interference during the learning of movement tasks. Contextual interference is interferences in the learning process that result from performing various movement tasks in a specific sequence. Despite a great body of research in this area, there is still insufficient scientific evidence to justify the use of various programs to learn and improve the backhand stroke accuracy in table tennis by intermediate and highly advanced players.

The purpose of the study was to assess the effect of learning and improving the backhand stroke accuracy in table tennis by using different training programs in the case of moderately qualified players.

The study included 64 table tennis players who were randomly assigned to 4 experimental groups: the group realizing the block program (GB), the group exercising according to the random program (GL), the group of self-regulated learning (GSR), and the group realizing the program “win – shift / lose – stay.” The method of research was an experiment. Participants learned and improved the accuracy of the backhand stroke in table tennis according to a specific program: block, random, self-regulated learning, and “win – shift / lose – stay.” The task of participants was to score as many points as possible by hitting the ball at three targets marked on the tennis table. The test developed by Poolton et al. (2006) was used to assess the accuracy of the strokes. During the acquisition phase, each participant completed a total of 630 trials, with 45 trials completed in three blocks during each of the fourteen practice sessions. During the each test: the baseline test, the post-test, the retention tests and the transfer test, all the participants completed 90 trials in three blocks.

It was found that in terms of the immediate effect, the accuracy of task performance during the acquisition phase was the highest in the case of the program “win – shift / lose – stay.” The groups learning according to the random program and self-regulated learning

program demonstrated a statistically significant higher accuracy (number of points) than the group exercising according to the block program in the delayed retention test. Based on the value of the Cohen's d effect size, it was shown that the GSR recorded the highest effect of learning and improving skill in the delayed retention test compared to the other groups with the imposed exercises scheme.

Key words: contextual interference, self-regulated learning, block practice, random practice, motor learning

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