

Construct a model in a 50 meter freestyle swimming using artificial neural network of physiological, kinetic and anthropometric variables

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Abstract

The aim of the study was to provide a model for the selection of young swimmers using the Artificial Neural Network (ANN). To achieve this goal, the study questions that indicate the level of contribution of the physiological, kinetic and anthropometric variables in swimmers were determined in a 50 m freestyle swimming using artificial neural network.

The researcher used the descriptive method in the survey method. The sample of the study consisted of the Jordanian swimming pool for juniors registered in the Jordan Swimming Federation for the 2015-2016 sports season. The number of participants was 23 males and females. The researcher used statistical packages to reach the results of the study. Neural Network Analysis (Multi Layers).

The study variables included physiological variables (heartbeat: in rest, after performance, after exercise) Anaerobic capacity (anaerobic capacity 5 seconds, anaerobic capacity 30 seconds, anaerobic capacity rate) Obesity indicators (BMI, fat ratio) Strike rate, rate of speed, time, efficiency index) and anthropometric variables (circumference, Length and Width).

The results showed that the method of using artificial neural network proved its ability to select swimmers. The swimming velocity variable is also the most variable on swimming time (50 m), followed by anaerobic capacity variable (30 seconds) followed by body mass variable. Pulse after exercise is the least contribution.

The study also recommended the development of physiological, kinetic and anthropological variables for swimmers through training programs, conducting other studies on samples and

other societies using artificial neural network, and circulating the results of the study to be used by those interested and working in the field of swimming.