Time Analysis of 25 meter Swimming of Junior National Level Swimmers

Dr. Md. Zafiroul Islam[1]

Abstract

Objectives: *The purpose of the study was to analyse the zonal time of 25m sprint swimming in junior national level swimmers. Methodology: Twelve Bangladesh National level junior swimmers were selected conveniently as subjects for the study. The data collection for the study were from Navy Swimming Pool, Dhaka. The total distance of 25m was divided into five equal zones of 5m each. The time of every 5m zone was recorded. Zonal velocities were calculated from zonal distance-time information. Kinematic nature of 25m sprint swimming was analyzed from the obtained velocity-time information.*

Outcome: *The results indicated that the swimmers achieved top velocity just after start at a distance of 2.5m. Thereafter, the swimming velocity gradually decreased and from 10m distance it became almost constant up to the finish.*

Key words: *Time analysis, swimming*

[1]Associate Professor and Chairman, Department of Physical Education and Sports Science, Jessore University of Science and Technology, Correspondence: zafiroul@gmail.com

Introduction:

Time duration is considered as the measure of performance in events like running and swimming. Time analysis therefore becomes the analysis of performance for these events. It is a sequence of performance indexed in time order. Most commonly, it is a sequence taken at successive equally spaced points in time. It reveals short term fluctuations in performance which are neither systematic nor predictive. Common goal of time analysis is extrapolating past behaviour into future. Time analysis comprises methods for analyzing time data in order to extract meaningful characteristics of change in performance. It provides a model to predict future trend of performance based on previously observed values. Moravec, Ruzicka and others (1988) used time analysis for 100m event of II World Championships in Athletics. Rumee, Yasmin and Bhowmick (2003) usedthis technique for 100m run of BKSP sprinters. The purpose of the present study was to use this technique of time analysis for 25m swimming of junior National level swimmers of Bangladesh.

Methodology:

A total of twelve swimmers within the age group of 15 -18 years were selected conveniently as subjects for the study. They were all junior national level swimmers of Bangladesh. At the time of collection of data all of them used to practice under the supervision of qualified coaches. For collecting data, the subjects were tested for their performance in 25m swimming at the Navy Swimming Pool at Banani, Dhaka. The total distance of 25m was divided into five equal zones of 5m each. Time keepers were posted at the end of each of the zones for recording zonal time of the subjects in 25m swimming. Each subject started swimming with usual command. Time was recorded at the end of each zone.

Result and Discussion: From distance-time information, zonal time and zonal velocities were calculated. Table -1 shows the mean values ofdistance-time, zonal time and zonal velocities of the subjects in 25m swimming.

Mean distance-time, zonal time and zonal velocities of the subjects in 25m swimming (Table-1):

| Distance	Mean time (s)	Zonal time (s)	Zonal velocity (m/s)
0	0	1.93	2.59
5	1.93±0.53		
10	4.62±0.44	2.69	1.86
15	7.36±0.43	2.74	1.82
20	10.05±0.54	2.69	1.89
25	13.01±0.38	2.96	1.69

From table values it is seen that the time for swimming was gradually increasing with distance and the mean time for 25m swimming was 13.01s. Distance -time graph has been presented in Fig.-1.

It is seen from the graph that the increase in time with increase in distance for 25m swimming was linear in nature. It is also seen from Table values that the zonal time for initial zone (0-5m) was theleast of all.
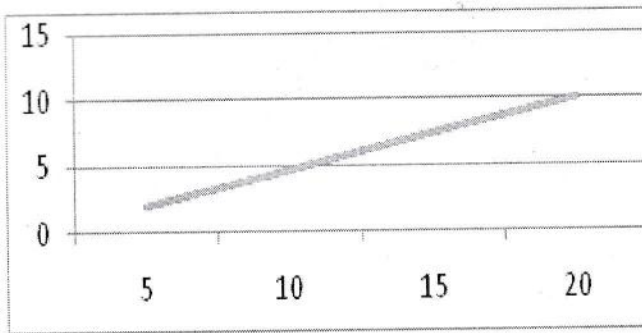
The mean values of zonal time were increasing with distance. The zonal velocity was calculated from zonal time information. Fig.2 represents the zonal velocity curve for 25m swimming.

Fig-2:Zonal velocity curve for swimming
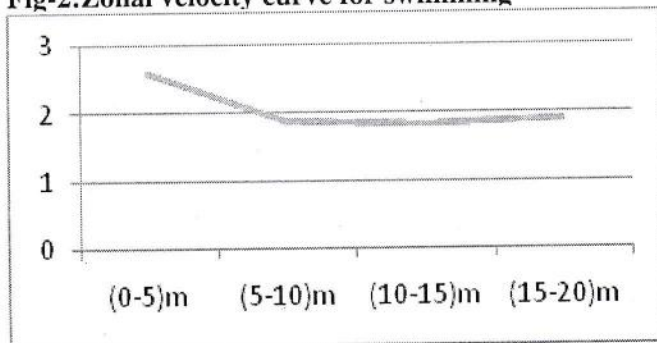
It is seen from the zonal velocity curve that the velocity at the starting zone was highest and afterwards the zonal velocities decreased during swimming.

Conclusion: Within the limitations of the study, on the basis of results obtained, the following conclusions were drawn as in swimming, the starting velocity remains high may be because of the starting dive and movement of the body through air.After start, the velocity reduces with the body becomes plunged into water for swimming forward.The nature of change in velocity during start in swimming differs from that of running. In running, the velocity gradually increases, but in swimming the velocity decreases just after start.

References:
Moravec, p., Ruzicka, J., SUsanka, P., Dostal, E., Kadejs,M. and Nosek, M.(1988). Time analysis of 100m events at II World Championship in Athletics. New studies in Athletics, 3, 61-96.

Rumee, N I, Yasmin, S, Bhowmick, S. (2003). Time analysis of BKSP sprinters in 100m race. Bangladesh Journal of Sports Science, 3:1, 14-20.