

Research summary

*** Introduction :**

Challenges that encounter physical education specialists ,nowadays, and the quick advancement that took place in aspects of our lives, made it necessary for those working in physical education fields, whether trainers, teachers, or researchers, to adopt the modern teaching and training techniques to achieve the aims and purposes of physical education, that would face these challenges.

Scientific and technological advance added a lot of new modern techniques , concepts and theories that could be used in preparing the suitable climate for physical education specialist to prepare the individuals in a high efficient manner that would enable as well as qualify him to face the challenges of modern age.

There is no doubt that sports standards, in general, and swimming, in particular, have steeped forward . this is due to the huge progress in teaching technique and training technique that used efficiently the results of studies and researches . this advance occupied the minds of sports scientists and researchers . This led to using scientific method in analyzing many problems concerning technical performance that created obstactes to achieve progress in sports standards , in general , and swimming , in particular.

Despite the great progress that occurred in motor education and the new improved theories that helped players achieving the highest level , there is an agreement among scientists that level of technical performance and the way to improve it , especially for joinors , is the base to reach these levels and to set new records in the future.

As for swimming competition , we find that technical performance for different swimming plays a vital role in achieving the desired sportive aim. Setting new record is the result of many combining factors , most important amongst them is technical performance aspects. This made all working in swimming sport fields for the emphasis to elevate the technical performance.

Looking at the different swimming techniques and their requirements, and since it requires the suitable coordination between body parts during the performance , that is why motor coordination plays a major role in the motor performance of swimming . There is no swimming technique , especially breaststroke.

That do not require motor coordination to perform in the best manner and efforts economically exerted to perform in the suitable time.

*** *The problem of the research :***

The problem of the research stems from some observations developed by the researcher through his experience as a breaststroke swimmer in the national varsity and his experience as a tainnar ,for noticed that there are challenges confront swimmers , especially jouniors , when performing , especially breaststroke , that requires moving different body parts , at the same time , indifferent directions . it requires complex moves like arm stroke in the insweep that meets with leg stroke the recovery phase , and vise versa. When jouniors perform these movements , they involve musles that are not required to move , the thing that led to the inconsistency in performing the movement.

Through reviewing the literature in swimming , the researcher found lack of treatment of developing motor coordination in breaststroke except for Mayro (1999) who analyzised effects of some coordination variables in breaststroke , Hedeky et al. (2001) who analysed the stroke phases and coordination between arms and legs movements during (50 - 100- 200 meter) races , cholet and leplanc (2004) about the coordination between arms and legs movements in stream line breaststroke , Takagi (2004) about variation in stroke phases and coordination between arms and legs and changes in speed in

Despite the availability of a wide base of junior swimmers who have the required physical measurement and the separate arms and legs movements in breaststroke , when they perform the complete combination , there are **obstacls** that hinder their quick swift flow in the water.

Breaststroke deceives the viewers as being the easiest swimming among the four swimming types , yet ,it requires the highest degree of motor coordination between the upper and lower limb . This is the reason why the researcher chooses breaststroke as a subject for his research.

The researcher wanted to shed light up on the importance of motor coordination for swimming , in general , and breaststroke , in particular. The acquiring of needed motor coordination require great attention from swimming trainers and instructors and care for coordination exercises into their training framework to raise the coordination level . this would affect the technical performance that would reflected in the improved records of the swimmers.

The importance of the research comes from the need of trainers and instructors for some rules to contribute the achievements in swimming . Also ,to raise the level of the swimmers by using his potentialities to perform in the best available way.

Also ,the program ,designed by the researcher to develop motor coordination in breaststroke , as well as the results of the current study ,would reflect the importance of coordination for the swimming instructors. From the above came choice of the research to set a proposed program to develop motor coordination for breaststroke swimmers.

**** The importance of the research and the to it :***

1)Scientific importance:

This research is a serious scientific effort to use the specific drills , through a proposed program , to raise the level of motor coordination breaststroke swimmers. This would be useful in :

- Directing trainnars and instructors to the importance of using specific drills in raising general technical performance level.
- Recognizing the contribution share of total coordination phases in the stroke time in breaststroke .
- Opening new horizons to test this program on other swimming technique.

2)The applying importance :

- Designing a proposed program for specific drills that aims at achieving the best dynamics of technical performance in breaststroke.
- Identifying the effect of group of proposed specific drills on the motor coordination of breaststroke swimmer and the technical performance level.

**** Aims of the research :***

This research aims at preparing an instructional proposed program to develop motor coordination to raise the level of technical performance for junior breaststroke swimmer , to identify :

1. The effect of the program on the motor coordination level.
2. The effect of the program on level of technical performance (performance components – performance variable).

3. Development rates achieved by the program in the level of motor coordination and level of technical performance.
4. The correlation between motor coordination variable and technical performance variable.
5. The ratio of motor coordination variable share in total stroke time for junior breaststroke swimmers.

****The hypotheses of the research:***

1. There are statistically significant differences between pretest and post test on the motor coordination variables for junior breaststroke swimmers, in favour of the post test.
2. There are statistically significant differences between pretest and post test on level of technical performance (performance components – performance variable), in favour of the post test.
3. There are advancement ratio in motor coordination variable and level of technical performance (performance components – performance variable), at the selected sample.
4. There are statistically significant relation between some of the motor coordination variables and technical performance variables (length of the stroke – number of strokes – speed of swim) for junior breaststroke swimmer in the post test.
5. Some motor coordination variables contribute (arms and legs phases and interaction time) in the total time of the whole stroke for junior breaststroke swimmers.

****The procedures of the research:***

The methodology of the research:

The research used the experimental method to fit the aims and the hypothesis of the research, with the use of one experimental group and two tests (pretest – post test).

The population of the research:

The population of the research is a El Ahly club swimmer, age (13 – 15) years, who are registered in the Egyptian swimming federation in (2006 – 2007). They were 75 swimmers.

*** The sample of research:**

The of research was chosen from the population with the purposive technique from El Ahly sports club swimmers age (13 – 15) years. They are 20 swimmer. They represent (26 – 6%)

Five swimmers out of the population were excluded as follow :

- Three swimmers for not being regular attendance.
- Two swimmers because of their injuries.

The total number of the sample is (15) swimmers . Also (10) swimmers , out of the basic sample , for executing the pilot studies.

****Tools and data collection techniques***

The researcher used the following in data collecting :

- Literature review.
- Observation
- Forms and personal interviews
- Tests
- Tools and apparatus.

****Pilot studies:***

The research executed pilot studies on a sample of the original population , and from outside of the population. The pilot studies aim at :

- Trying some specific exercises from the research and identifying its suitability to the age group (13 – 15) years.
- Ensuring the validity of the tools of the research.
- Designing and testing the test of the measurement of the research variables.
- The suitability of the program unit to age group.
- Training the assistants on the way to use the procedures of the research to measure the research variables.

****The main study:***

The main study was executed through the following steps :

- Executing homogeneity of the groups.
- Executing the pretests from 14/12/2006 to 15/12/2006 , at El Ahly sports club , to all the research variables.
- Applying the program in three months – twelve weeks – four units a week , from 16/12/2006 to 9/3/2007.
- Performing the post tests from 10/3/2007 to 11/3/2007.
- Collecting , classifying , statistically analyzing the data to conclude the results.

*** Statistical treatments:**

The researcher used the following statistical techniques :

- Mathematical mean .
- Standard deviation.
- Quartz factor.
- T test to test the difference between two different measurements for the group (pretest - post test).
- Person correlation coefficient.
- Contribution ratio equation.
- Improvement ratio equation.

*** Conclusions :**

Based on the research procedures and the statistical treatment , the researcher concluded the following :

1. The program proved statistically significant differences and improvement ratio on some motor coordination variables (time of arms in sweep – total arms movement time – time of legs recovery phase – time of legs kick – total legs movement time)
2. The program proved statistically significant differences and improvement ratio in the variables of total kick (total kick time – total time of both arms and legs – interaction time).
3. There are statistically significant differences and improvement ratio in the interaction time, in comparison with model interaction time (profile) The improvement ratio was (12 - 371%).
4. There are statistically significant differences , in favor of the post test and the improvement ratio in technical performance variables (number of stokes – length of stokes – frequency of strokes – speed of swim).
5. There are statistically significant differences ,in favor of the post test and the improvement ratio in motor performance components (body position – legs kicks – arms movement coordination and breathing – total number of the motor performance).
6. There is a statistically significant correlation between motor coordination variables and the recorded numbers in 50 meters breaststroke swimming (time of arms out sweep – total arms movement time – time of legs recovery phase – time of legs out sweep – total legs movement time – total legs and arms time – interaction)
7. There is a statistically significant correlation between some of technical performance variables and recorded numbers in 50

Research synopsis

Motor coordination is one of the main components of motor performance, in the field of swimming, especially breaststroke swimming, since it requires its practitioners to have a distinguished technical performance with symmetry and economy in effort as well as time required for this performance. This is a proposed educational program on the technical performance level of junior breaststroke swimmers. The research used the experimental technique, since it suits the aims and the hypothesis of the research. The design was one group of 20 swimmers. The researcher relied on verified data collection techniques. Within the lights of the research and the statistical treatment the researcher was able to conclude that there are statistically significant differences between the pretest and the post test on some of the variables, in favor of the post test. The research recommended the necessity of using the proposed educational program, within the framework of the training-educational programs carried out in the different age levels for Junior breaststroke swimmers.



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***The effect of a proposed Educational program on the
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