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THE EFFECT OF FLOAT TOOLS ON SOME BASIC SKILLS PERFORMANCE IN SWIMMING AND SOME PHYSIOLOGICAL VARIABLES FOR STUDENTS IN FACULTY OF PHYSICAL EDUCATION

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Abstract

Purpose. The research aims at recognizing the effect of using buoying instruments on some basic skills of swimming and some physiological variables for female students at faculty of physical education, Beni Suef university through.

Methods female first graders, faculty of physical education, Beni Suef University on 2011/ 2012, of (136) female students, the researcher selected a random sample of(40) female students, divided into two equal groups.

Results this to the existence of improvement in level of skilful performance of basic skills and level of some physiological variables for female students (experimental research sample) to using the suggested educational program by using id buoyancy instruments that contribute greatly is learning swimming basic skills quickly and in a good way,

Conclusions that variation and using aid instruments well contributed greatly in learners ability on learning speed, skills perfection and that using appropriate modern educational methods help in learning and perfecting skills quickly and increasing effectiveness of swimming lessons.

Key words: Basic- swimming- physiological - float tools.

Introduction

The most important advantages of sport is it's close connection with developments and other natural, sciences bases where every sport activity is characterized with special abilities and description qualifying sportsman to practice this type of activity and empowering him to reach high levels

Add (Essam2003, Bahgat 2007) Swimming – as sport- is practiced by both sexes and indifferent ages according to their abilities. It differs from the remaining other sport activity, since aquatic milieu is considered a basis for progress by using arms, legs and trunk, and on the other hand it represents individuals ability to interact with aquatic milieu that differs from land milieu in which he lives raising individual's efficiency physically, skillfully and physiologically and reaching multi- aspects balanced education.

(Lee 1991,Watah, 2005) Although there is an ideal technical performance of swimming modes by which each learner adheres in performing this movement, but there is a difference between one learner and another in his functional potentials, so this performance may appropriate for some athletes but not for others

(Mahmoud, 2007) indicates that each skilful performance requires a special kind of abilities that must be available for the athletes himself as well as training process related abilities. Physical and physiological abilities form fundamental aspects influencing the level of recorded championship acquisition where physical activity requires a certain degree of functional aptitude that prepares the body to face the requirements of practiced activity type so that the process of physiological adaptation occurs that

leads autonomously to this adaptation.

(Elgohari, 2003) see that different effects of physical training types on bio- systems and t is one of the primary aspects that contributed in developing methods of sport training , since these studies aim at showing the effect of physical performance methods on compositional and functional aspects of body organs and systems.

And that one of the most important sport scientific measurement is to recognize physical ability of the athlete including physiological traits as a basis to diagnose his health state evaluate his physical abilities in relation with his specialized sport activity as well as using it's results in structuring training leads for sport activities.

Add (Matheus 1998, Mohamed 2001)Body position of the learner during practicing swimming is one in which blood pressure is in it's least levels during lying, because blood will run away a bit away from the effect of gravity and heart rates reduces also, since the learner often makes muscular work with breath holding generating the rise of carbon dioxide in blood to make body responds for this change by expanding arteries especially carotid arteries feeding the brain. This response shifts to adaptation over time leading to the development of brain feeding process and develop mental abilities

(Moustafa 1998, Bahaa 1994) Aid instruments are used in performing exercises of introductory swimming that facilitate the potential of skill that are desire to learn, and they help in overcoming fear, so they are considered one of important educational factors as well

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as their role in helping learner to verify education that stimulate learner's tendencies to improve better performance

(Mohamed, 2002) sees that using instructional methods in the process of learning motor skills leads to construct and develop motor perception of individual learner, improve performance descriptions, and influence learning speed

(Rodrigues 2002, Usama 1999) Aid instruments are considered one of important factors in attracting learners attention, stimulating their interest, and work on forming positive attitudes in work, improving performance, saving teacher's effort and helping learner on speeding and perfecting swimming skills and it also helps in reducing time allotted for learning the skill.

Previous studies and scientific references such as study of " (Wesel 2000) indicated that programs that rely on using buoyancy instruments influence positively on the level standing in water, and performance legs alternative strokes for (12.5 m) , swimming for (15m) and effectiveness of aid instruments in getting rid of fear factor and speed in learning swimming.

Ali, 2002, indicated that training programs that use aid instruments worked on improving all components of physical fitness related with health, body composition and assimilation during rest. They indicated metabolic response, cardiac and blood vessels of shallow water exercises and change positively physiological standards , where heart rates and maximum oxygen consumption reduced, and lungs ventilation increased for experimental group research in an attempt to recognize the effect of using instruments of buoyancy on the level of performing some basic skills in swimming and some physiological variables.

Aim of the research:

The research aims at recognizing the effect of using buoying instruments on some basic skills of swimming and some physiological variables for female students at faculty of physical education, Beni Suef university through:

Recognizing the differences between means of -1 pre- post measurements for the experimental group in physiological variables (bio capacity-maximum oxygen consumption, rate of basic skills in swimming (swimming for 15m , standing in water beginning distance, legs strokes from buoyancy position, standing in water.

Recognizing differences in means of two post -2 measurements for control experimental groups in physiological variables and basic skills under research.

Plan and procedures of the research:

Method of the research:

The researcher used the experimental method , Experimental design was used for two group by using (pre- post) measurement for them,

Community and sample of the research:

Community of the research represents female first graders, faculty of physical education, Beni Suef University on 2011/ 2012, of (136) female students, the

researcher selected a random sample of(40) female students, divided into two equal groups.

Normal distribution for the research sample in relation with the research sample.

Arithmetic mean, median, standard deviation, and coefficient of kweness were calculated for the variables under research of the sample. Value of Kweness coefficients for variables under research ranged between (- 0.82, 1.63). All these values of all between (± 3) meaning that the sample under research is distributed normally in relation with these variables.

Equivalence between the experimental and control groups:

Differences significance was calculated between the experimental- control group in variables under research where "t" calculated values ranged between (0.15, 0.80) and all is less than tabulated "t" value at significance of (0.50) of (1.81) indicating that there is no statistically significant differences between the control- experimental groups in both development ratios, physiological variables and basic skills under research indicating to the equivalence of both groups in these variables.

Methods of data collection:

The researcher acknowledged and reference surveyed scientific references and Arabic and foreign previous studies and year specialized in the field of sport training in general and swimming training in particular in purpose of restricting and determining the most important physiological variables related with swimming and how to measure them, as well as swimming basic skills and surveying the opinion of (5) experts in what was achieved. Great tests were used with 80% of experts as follows:

Firstly: apparatus:

Sport tester PE 3000 to measure cardiac rate.

Accor sport to measure ratio of lactic acid in blood.

Anthropometry to measure height and weight.

Dry Spiro miter to measure bio- capacity.

Secondly: Tests:

Harvard step test to estimate maximum oxygen consumption.

Test of 15.m swimming.

Test of measuring starting level of swimming.

Tests of legs strokes from buoyancy 12.5m

Test of standing in water.

Thirdly: instruments:

Shoulders board.

Stop watch

Buoying boards.

Ropes (5.10m)

Board of legs strokes.

Buoyancy belt.

Stones and cubes.

quartile and lower of "t" test between higher quartile and lower quartile in physiological tests and basic skills of swimming under research ranged between (3.36, 8.88) in the direction of higher quartile and all are statistically significant values at level of (0.05) meaning that tests are able to differentiate between

different groups.
 B – Reliability:

Reliability of physiological tests and basic skills of swimming under research, were calculated by applying test- retest with an interval of (3) days from Sunday 12/2/2012 to Wednesday 15/2/2012 on the pilot sample. Values of correlation coefficients

between first – second application in physiological tests ranged between (0.91- 0.096), and in tests of basic skills in swimming ranged between (0.090 – 0.92). They are statistically significant correlation coefficients at level of (0.05) indicating reliability of these tests.

Table (1)

Presenting and discussing the results:

Differences significance between means of pre- post measurements for the experimental group and change rates in variables under research (n = 20)

Variables	Measurement unit	Mean of pre measurement	Mean of post measurement	Mean differences	Differences deviation	"t" value	Sig	Change rate
Cardiac ratio	Impulse / min	81.30	76.90	4.40	3.07	6.41	0.00	5.41
Mean oxygen consumption	millimeters /kg	33.40	35.90	2.50	1.99	5.63	0.00	7.48
Bio capacity	Liter	2.85	3.65	0.80	0.52	6.93	0.00	28.07
Lactic acid	Mill mole	1.90	1.65	0.35	0.45	3.44	0.00	13.16
15 .m swimming	Score	3.60	12.80	9.20	2.37	17.32	0.00	255.55
Starting distance	Meter	1.60	2.81	1.21	0.50	10.70	0.00	75.62
Legs strokes from buoyancy position (12.05 m)	Second	15.60	11.95	3.85	1.27	13.5	0.00	23.40
Standing in water	Min.	1.01	3.20	2.19	0.92	10.59	0.00	216.83

It is shown from table (1) that there are statistically significant differences between means of pre-post measurements for the experimental group in variables under research and in the direction of post measurement where calculated "t" value is greater than it's tabulated value a significance level of (0.05).

Table (2)

Differences significance between means of post measurements for experimental control groups in variables under research (N= 40)

Variables	Measurement unit	Control group		Experimental group		"t" value	Sig
		Mean	Standard deviation	Mean	Standard deviation		
Cardiac ratio	impulse / minute	80.30	1.17	76.90	1.71	7.32	
Mean Oxygen consumption	Millimeters/ kg	34.40	0.75	35.90	1.11	4.97	
Bio- capacity	Liter	2.84	0.32	3.65	0.27	8.59	
Lactic acid	Mill/ mole	1.62	0.14	1.55	0.18	1.27	
15 m. swimming	Score	10.30	2.41	12.80	2.04	3.54	
Starting distance	Score	2.01	0.32	2.82	0.42	6.76	
Legs strokes from buoyancy position (12.05m)	Second	13.45	1.23	11.95	1.28	3.78	
Standing in water	Minute	2.29	0.76	3.20	0.70	3.96	



It is shown from table (2):

There are statistically significant differences between means of post measurements for experimental control groups in basic skills of swimming and variables of (cardiac ratio, mean oxygen consumption, bio- capacity, and in the

Secondly, discussing the results:

First hypothesis states that there are statistically significant differences between means of pre- post measurements for the experimental group in level of physiological variables (bio – capacity- maximum oxygen consumption cardiac impulse ratio- lactic acid), for female students at Faculty of physical education (experimental research sample).

(Aza 2009, Campbell 2003) To ascertain hypothesis validity, the researcher compared differences results between means of pre- post measurements in tests of some physiological variables (impulse ratio- maximum oxygen consumption bio capacity Lactic acid) on behalf of post measurements for the sample under research, (of the experimental group if they are found. The researcher used test of differences significance between means (T- test) and test of improvement rate on stages of pre- post measurements to recognize improvement level in some physiological variables on behalf of post measurements if they are found after using the suggested educational programs and to know statistical differences significance between means of pre- post measurements.

It is shown from table (1) that there are statistically significant differences between means of pre- post measurements for the experimental group in physiological variables (impulse ratio- maximum oxygen consumption- bio- capacity- lactic acid) in the direction of post measurement. Results of the study accord with studies of " (Lee 2000) that swimming exercises improve the level of physiological traits for sport activities parishioners. The researcher attributes this that body position of learner during swimming in which blood pressure in it's least level during lying because blood runs away the effect of gravity , and that heart beats reduces also, consequently an improvement in the level of physiological efficiency for female students practicing swimming. This is what (Chaw, 2000) (Rodrigues, 2002) confirmed that interested in developing physiological abilities of athletes is one of the most basic requirements by which coach faces during designing training programs. More than that, developing these trait helps in delaying athletes sense of tire as a result of his performance of required physical effort during competition.

It is shown from Table (1) that there are statistically significant differences between means of pre- post measurements for the experimental

direction of post measurement for the experimental group where calculated "t" value is greater than tabulated "t" value at significance level (0.05)

There are no statistically significant differences between means of post measurements for experimental control groups in rate of blood lactic acid.

group in swimming basic skills (15. m swimming standing in water starting distance – legs strokes from buoyancy – standing in water).

The researcher sees that using buoyancy instruments attracted learners attention, stimulated their interest and excitement and forming positive attitudes in work in addition to stimulate learning motivation for them leading to save time and effort and help an acquiring the best skills and improve performance. Using buoyancy aid instruments leads to construct and develop motor perception for learners, consequently improve performance specifications and effect learning speed. This is what she confirmed that aid technical tools used inside water contributed in raising swimmer's efficiency and assuring full functional mobilization.

The researcher sees that variation and using aid instruments well contributed greatly in learners ability on learning speed, skills perfection and that using appropriate modern educational methods help in learning and perfecting skills quickly and increasing effectiveness of swimming lessons.

Results of the study accord with studies of (Bathgate 2007) that using aid buoyancy instruments leads to improve the level of learning swimming basic skills.

It is shown from Table (2) that there are statistically significant differences between means of pre- post measurements for both experimental control groups and in the direction of post measurement for the experimental group in physiological variables (cardiac ratio- mean oxygen consumption – bio-capacity), the level of skilful performance (15. m. swimming standing in water- starting distance – legs strokes from buoyancy – standing in water).

The researcher attributes this to the existence of improvement in level of skilful performance of basic skills and level of some physiological variables for female students (experimental research sample) to using the suggested educational program by using id buoyancy instruments that contribute greatly is learning swimming basic skills quickly and in a good way, by education process regularity within educational lecture, this influenced positively on level of physiological traits for experimental research female students.

Recommendations:

Applying the suggested educational program on swimming female beginners.

Interested in using aid instruments especially buoyancy instruments in learning and training swimming.

Conducting further studies dealing with the effect of exercises by aid instrument and buoyancy in other swimming and different samples. Conducting further studies dealing with the effect of exercises with



instruments in other educational forms and physical and physiological variables for female students.

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