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A Study Regarding the Level of Performance Specific to Backstroke Swimming with Students at Physical Education and Sport

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Abstract

Among the proceedings specific to swimming backstroke is considered to have the best results from the point of view of technical execution reported during learning and perfecting. The university curricula for swimming has a limited number of classes in which students should get skills both practical regarding the performance techniques, as well as methodological aspects regarding specific teaching, which actually limits the level of technicity in relation to the time allotted. The aim of the study was to establish the level of performance from the point of view of the performance technique of backstroke with first year students at physical education after attending the swimming practical lessons. The experiment took place during to 2015-2016 school- year it was made an 18 boys, between 19 and 22, students from specialization Physical Education and Sport. The motric tests referred to: the floating length dorsal and floating with push from the wall and the time achieved an 25 m. backstroke. As a result of the study the back- floating a progress of the 0.3m. was recorded and with the test of the performance technique there was a 1,81 sec. progress. The applied technology recommended in the university curricula is efficient and leads to positive results from the point of view of the technical level with the individual performance if a methodology is applied, based on scientific norms with practical and theoretical efficiency clues within the time allocated.

Keywords: backstroke, technique, floating, methodology, students

Introduction

In this study we wish to present the results obtained after testing and analyzing the parameters of backstroke swimming, that is the level of back- floating and the technical level of the performance, putting an extra stress on the correct movements and body – posture and recording at the same time the variations in speed.

In order to get a proper development of the teaching process, the following requests must be respected: the successive involvement of articulations and muscle groups in the effort, the progressive use of exercises, the respecting of the principles of physical activity, the optimal distribution of the effort.

“Since the specialist who leads the teaching process has a non-homogenous group at class, he must take into account the motric level of the group but also of each individual, which will require an adjustment of the difficulty of the exercises“ (Badau, 2016: 46).

The author Grosu (2012: 9) considers that “the capacity of combining/recombining complex mental images is determined by specific proprioceptive and kinesthetic information processing”.

Backstroke is a procedure which requires a good physical condition but which should also rely on a correct specific technique.

In a study with identical subjects of our study (Statkevičienė and Venckūnas, 2008: 238) considers that “Most effort was given to teaching the backstroke, since the acquisition of this technique is slower than that of the other strokes. It would be useful to perform additional research to determine if the backstroke is more difficult for athletes to learn as compared with other strokes”.

Sportive training is defined as a multilateral, complex, psycho-social, methodical and pedagogical process, which monitors the morphological-functional perfection of the body, with the purpose to increase the sanogenetic standard, the resistance to exogenous and endogenous factors and to improve the psychophysical effort capacity, all these summed up leading to high sportive performance (Herzog, 2012).

Badau (2006: 83) stated that regarding the performance technique claims that learning the techniques in the different sort- branches is conditioned by the laws and stages of learning of metrical acts in accordance with the specific factures of the respective branches. The statement is valid in swimming too, which being an individual spat requires a permanent adjustment an the specific of the subject who will have to achieve a high efficiency through his motric development and high technical aspects.

Performance, particularly in competitive swimming, is a multidimensional phenomenon characterized by a highly complex interplay between several variables. We were able to successfully classify young swimmers based on anthropometrics, kinematics, hydrodynamics, and efficiency. It was also possible to determine if their performance depended more on intrinsic (ie, anthropometrics and biological development) or extrinsic (ie, technique enhancement and training) factors (Jorge E. Morais et al., 2015: 267).

In the framework of the subject teaching swimming for the first year I, we aim to convey and to put into practice as many concepts as possible specific to the teaching of the swimming techniques, taking into account some aspects such as the methodology of teaching, the selection of the means of action that are to be applied, the sequence of learning elements of the technical components of each process, related to the level of physical training; the age of

the future students and certain anthropometric indices, the university curricula also provide students with is learning the correct movements, specific to each method of swimming.

The applicability of the theory in actual practice requires the future specialists, an image Complete the sequence and execution technique of the components of the processes of swimming, which necessarily will add effective work with groups of people, which will be carried out normally after graduation because no hours allocated not satisfactory and this component of the teaching process.

“The lesson is the main form of organizing practical activity in swimming. It is a unitary teaching process in which the contribution of the teacher blends with the one of the students aiming both aspects of instruction and education“ (Badau, Ungur, Badau, 2016: 22-23).

Future specialists, which are now first year students are asked to be able to render theoretical and methodological information, as well as motric skills specific to backstroke at the highest possible level with a good performance technique.

“Considering that for each swimming class a special unit is planned, based on which we formulate the general and special tasks and aims of the class, we select the appropriate methodology, props, logical order of the exercises, as well as the organization of work, and we carefully approach duration and intensity of individual exercises so that each swimming class could represent a separate unit“ (Toskić et al., 2014: 196-197).

Learning the swimming techniques “represents the most rational and efficient way to perform the exercise. By this technique, we understand rationally based movements, suitable to the aim of obtaining superior sport results. In any situation we have to relate to the individual particularities of the subject as well as to the conditions in which the movements are performed“ (Enoiu, 2015: 75).

Educating students in the effective use of the sports facilities of the university in physical activity and craftsmanship teacher, it is an important factor in active participation in physical activity of any kind (Turkmen et al., 2015: 580).

Hypotesis: Applying the curricula for the first – year in physical education and choosing the most efficient strategies based on a modern and scientific approach, are can obtain a higher technical level in the performance of backstroke and back- floating.

Materials and Methods

Period and place of the research: the experiment took place over a period of 14 weeks, the first semester of the university year 2015-2016.

The allocated time for each practical class specific to the swimming subject has been of 60 minutes for each group. The classes took place at the spa center of Tirgu Mures University of Medicine and Pharmacy which is specially designed to allow swimming courses. The length of the pool of 25 meters with 4 swimming corridors, and a depth ranging from 1,6-2,5 meters.

The initial testing for back- floating was dare at the end of the second class, because in the first are we improved and consolidated the technique. The final test were done in the last class, at the end of the semester.

The initial testing for the 25 m. time swimming was done in the third class of practice after covering the theoretical classes. The initial testing the swimming distance of 25 meters timed,

was done at the end of the five hour of practical work while learning lesson after going through final testing in the last half hour or week 14. It is to be mention that all subjects had mastered a technical level satisfactory technical level of backstroke.

Throughout the semester, students kept practising this procedure, even if in every lesson they still had to learn new technical and methodological things and other specific elements.

Subjects and groups:

The subjects of our research are freshmen- first year students from physical education and sport specialization within the Motricity Sciences subject. The experiment comprised a total of 18 students, who were split into two groups of 9 subjects, excluding the girls. Their age is between 19-22 years old, and the sports they practiced before university were: football, basketball, volleyball, karate. We mention that no subject has previously practiced strictly water sports and has not competed in any specific competition. The applied methodology on both groups was identical as it is provided for in the university curricula for this subject at this value and educational level.

Tests applied:

In our study we have applied two tests targeting the motor skills level specific to crawl stroke through its components: the facial gliding and the distance run against the clock which outlines the level of individual technicality.

Gliding dorsal push from the pool wall. Technical execution from a stand on one leg facing the wall, the other leg bent with the sole on the wall, hands on the edge of the pool, head in extension, the swimmer takes the specific position of back – gliding. While gliding, legs and arms perform no movement.

The distance covered is measured in meters, taking into account the distance from the wall to the first heel dived mare that 15 cm. into the water. The tape measure was placed on the edge of the pool and the depth was approximately calculated with the help of a swimming pool interior edge which was 10 centimeter deep.

For the second test, the 25 m. backstroke against the clock, with a start in the water, time is measured in seconds. The chronometer was started with the first movement and it was stopped when the swimmer reached the opposite wall of the pool with his hand.

Applied methodology:

In applying the specific swimming methodology, we have selected the most efficient means, taking into consideration previous experience in teaching swimming and the absolutely perfectly suitable material resources available for teaching learning methods.

Learning, consolidation and perfecting backstroke has the advantage that the attention is mainly placed on the movement and coordination of the segments, since breathing, which normally requires more practice and a larger time, is done in a natural way, so the technical level may short period of time.

Taking into consideration the aims and the content of the curriculum for this discipline I have designed a planning for the learning and consolidating elements in the timespan of a semester:

- the first two classes: specific preparation and familiarizing of the subjects with water and with front and back – grinding. All the end of the second class I performed the initial testing for back- grinding, besides the allocated class

- beginning with the third class we worked for consolidation and perfecting leg movement, specific backstroke procedure, especially in the first half and at the end of the lesson, because the fundamental part working and other elements specific crawl.
- the fourth lesson was dedicated to the arm movement specific to back-stroke.
- in the fifth lesson after two full-lengths we performed the initial testing for the second part, that is backstroke timed on 25 m.
- the next six lessons we practicing backstroke, one third in each lesson, mainly at the end of the lesson focusing on technicality movement, body position and movement rhythm segments.
- the last lesson was the final testing for both probes.

The didactic strategy and the selected exercises are in accordance with the subject – card designed by the titular specialist of practical activities together with the titular of the swimming course.

The combination of the practical knowledge delivered during the courses with their application in practice offer to the future specialist, the present day student a concrete image of what he has to learn and to correct, then by deepening will be able to autocorrecting.

The preparation for their future occupation - teachers of Physical Education, also includes teaching swimming. The main goal of swimming courses during their university studies is to individually help students achieve optimum level of swimming technique. The content of the courses is aimed exclusively at learning and improvement of all swimming strokes (Mandzák and Stankiewicz, 2014: 34).

Results and Discussions

We are going to present the results and their interpretation for the specific back-stroke procedure obtained in our sample group.

Back-sliding:

Table 1. Centralisation of the results for back-sliding

| Coefficients | TI | TF |
|--------------------------|---------------|---------------|
| Minimum | 2.700 | 3.000 |
| Maximum | 4.700 | 4.900 |
| Mean | 3.308 | 3.539 |
| Std. Deviation | 0.4373 | 0.4340 |
| t, df | t=31.61 df=17 | t=34.10 df=17 |
| P value (two tailed) | | < 0.0001 |
| Coefficient of variation | 13.22% | 12.27% |
| Sum | 59.55 | 63.70 |

For this event focusing on the length of the back- sliding the difference between the final testing and the initial and the progress was 0.3m., which is a good result taking into consideration the time allocated for the practice.

Consequently to the statistic-mathematic analyses, applying the t-Student test and calculating the p value, at a level of significance 0.05, comparative between tests, the progress of the sample group is significant, which confirm our hypothesis.

The variety value is also good, which shows that the dispersion was not too high.

Swimming lesson teaching is a continuous process, the array of lecturers logical and coherent to follow and achieve the goals proposed.

Teaching swimming, each lesson is a link in the chain planned for learning a modern methodologies and techniques of acquiring a more correctly execution.

Back-stroke 25 metres:

Table 2. Centralisation of the results for back-stroke 25 m. timed

| Coefficients | TI | TF |
|--------------------------|---------------|---------------|
| Minimum | 22.20 | 20.19 |
| Maximum | 32.43 | 31.89 |
| Mean | 27.62 | 25.81 |
| Std. Deviation | 3.812 | 3.765 |
| t, df | t=30.68 df=17 | t=29.02 df=17 |
| P value (two tailed) | | < 0.0001 |
| Coefficient of variation | 13.80% | 14.59% |
| Sum | 497.2 | 464.5 |

For this event back-stroke 25 meters timed, the difference between the final testing and the initial are recorded a progress of 1,8 sec., which is to be explained by the applied methodology for the improvement of the technical level of the individual performance. Consequently to the statistic-mathematic analyses, applying the t – student test, the progress is significance. The variety value is also good, which shows that the dispersion was not too high.

Analyzing the aspect of this study we agree that “further studies should explore the correlation between sport and academic related motivation orientations through a multidisciplinary design approach” (Turkmen, 2013: 70).

Research regarding technical acquisitions of the students permit new approaches “however, researches did not observed relation between the improving on the performance and frequency or volume” (João B. Neto et al., 2016: 28).

“Apart from swimming teaching and learning, the algorithm of the educational activities understood in this way comprises above all understanding the sense and values derived from the swimming skill, applying these skills into the ‘better life’ strategies, getting acquainted with the learning and improvement methods, as well as the methods of self-discipline, self-assessment and self-rescue in water, understanding and following the legal standards and safety principles during water activities“ and “the effects of educational activities connected with swimming are more versatile than acquiring the sport technique of swimming” (Wojciech, 2008: 41, 43).

Conclusions

The research confirmed hypothesis: by applying the methodology of the curricula first year level, physical education are can get an improvement of the technical level of the performance in the back-sliding and back- stroke procedures. The good progress obtained by the students is due to the applied methodology but also to the applied strategies, coherent and logical regarding all the aspects back-stroke and back-gliding.

Due to the permanent practice and correcting of their technique, the students registered progress because of a general improvement in effort, specific to swimming.

For the future, we intend to analyse more technical aspects taking into consideration a larges range of means and the frequency of the swimming classes, related to the number of students who practice swimming compulsory or optionally. Swimming education is the process of the teacher’s profound impact upon a student’s personality by leading to acquiring new swimming skills and shaping the student’s positive and logic attitude with motor indoor activity in water.

Conflict of Interest

The authors have not declared any conflicts of interest.

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