

Model for assessing achievements of students in the academic discipline of Swimming

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Abstract:

After applying the author’s methodology for accelerated training in swimming of students from the groups of “Sports”, one of the most important indicators for quality of acquired skills is result of the training, expressed in digital grades, obtained during the inspection and assessment of the knowledge and skills of students during the current control and the final exam. The purpose of the paper is establishing a model for specific assessment of the achievements and the level of reached swimming training of students.

Key words: swimming, swimming styles, accelerated training, author’s methodology, assessment.

Introduction

Despite the included in the past and now mandatory training in swimming in school programs of the comprehensive school (if present is the material basis), the percentage of students who cannot swim is very large. This fact successfully hinders the students’ swimming training. The developed author’s methodology for accelerated training in swimming allows implementation of optimal loading of every student depending on his/her individual capabilities, increases the quality and efficiency of the school process and contributes to the mastering of two swimming styles’ techniques within the regulated hours included in the school plans of students. For the assessment of acquired skills during the swimming training of students of substantial significance are the testing and assessment. According to Andreev, through their personality (the student) forms significant components of the self-conscious and criteria of self-assessment, contradicts the social and psychic significance of achievements with those of others (Andreev, 1996).

In latest years the assessment is turned into an important mechanism for quality management of the entire educational system and of certain elements (St. Ivanov 2004).

The assessment is the most delicate model in the pedagogical process. It is charged with great dynamism and its experience as unfair leads to sharp conflicts between the education process subjects (Desev 2000). In the physical education and sports the assessment and control of changes in the human body, at the level of development of motor qualities of the athlete at systematically practiced motor activity, are performed via motor tests. Motor testing is a process of inspection, testing, measurement of a group of people or individually, with the purpose of establishing any condition or ability of those tested through the execution of specifically selected and standardized motor tasks (Kostov 2013).

In order to establish the correlation between the achieved level of swimming preparation and establishing a model for the concrete assessment of the achievements of students used was a dispersion analysis, finding an average value, dispersion and standard deviation for the two groups – men and women. For comparison of the average values used is a t-criteria of Student.

Material & methods

Main components of the design and methodology of empirical research are determined here in their sequence and structure. Subject of the research is the specific assessment and achievements of students in the swimming training. Subject of empirical research is the relation of assessment and achieved level of swimming preparation.

The **purpose** of the research is developing a model which to regulate the rules and order for performing control and assessment of acquired swimming skills for students after applying the developed author’s methodology for accelerated swimming training.

Contingent of the research is the students of the groups in discipline “Sports” trained in author’s methodology for accelerated mastering of swimming styles equipment (Lekina 2004). Educational content is distributed in 30 academic hours per one semester – 2 academic hours per week with duration of 90 minutes.

The formed groups, each including 16 students, have an overall number of extract of 32 students.

Resulting from the educational purposes of the academic discipline “Swimming” we specified educational requirements for determining the theoretical and practical level of students’ achievements.

For the implementation of the scientific research purpose we developed a test battery and theoretic test for establishing the level of acquired swimming skills and theoretic knowledge of students.

For researching the level of achieved swimming preparation we used the following main tests.

First stage:

Inhaling on land and exhaling in water; Thrusting and sliding of breasts; Thrusting and sliding of back

Second stage:

Legs breaststroke; Arms crawl; Legs crawl;

Third stage:

Legs butterfly; Legs back crawl – arms butterfly; Arms breaststroke; Arms back crawl; Arms breaststroke – legs butterfly; Legs crawl – arms breaststroke.

Forth stage:

Crawl – coordination /25 meters/; Crawl – coordination /25 meters/; Back crawl – coordination /25 meters/; Breaststroke – coordination /25 meters/.

Upon execution of the control normative we assess the technique of implementation visually through a 3-scale rate depending on the mistakes and their significance so that the level of achieved swimming preparation could be accurately assessed.

Test for acquired theoretical knowledge

Other form of control is the developed test for establishing the acquired theoretic knowledge during the swimming training of students. The volume of the test is coordinated with the contingent of research and includes 10 questions. At part of the tasks of the test given are 3 structured answers, two with an opened answer.

Every task is assessed with three points as the maximal number of points is 30.

Forming the grade

Final grade in school discipline “Swimming” for students from groups “Sports” is formed from the following components:

- 30% current grade formed from held tests in the first three stages (10% per stage)
- 50% two of the tests No 14, 15 and 16 optional (25 meters)
- 20% theoretical test

The final grade is formed based on the sum of obtained points from current grades in separate stages, swimming 25 meters with two swimming styles and the theoretical exam.

Results

The testing results, related to acquired swimming skills for men and women groups are presented in Figure No 1

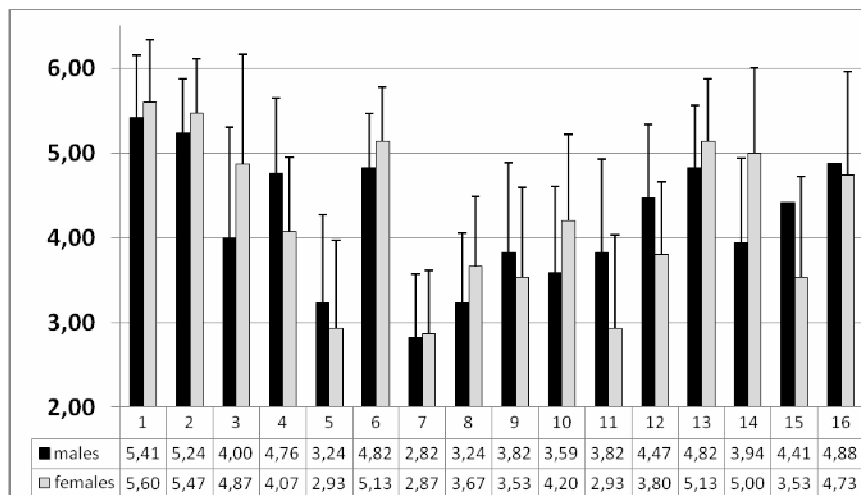


Fig.1. Grades in respect of acquired swimming skills tested by various tests at each stage of the methodology in the groups - women (N = 16) and men (N = 16)

As evident of figure No 1 women have best results at tests in separate stages of swimming training. Women and men have poorest results in tests No 5 and No 7 (legs breaststroke and legs butterfly). In the final testing (fourth stage) evident is that women master better the technique of swimming styles crawl and back and men the technique of crawl and breaststroke.

From the performed statistical processing by using the t-criteria of Student the difference in the achievements when performing test No 13 (coordination of swimming style crawl) at men ($\bar{X}=4,82$; $STD=1,13$; $N=16$) and women ($\bar{X}=5,13$; $STD=9,74$; $N=16$) indicates that there is no statistically significance difference. At test No 14

(coordination swimming style back) at men ($\bar{X}=3,94$; $STD=1,52$; $N=16$) and women ($\bar{X}=5,00$; $STD=1,00$; $N=16$) the difference is close to the statistically significant one ($P<0.05$) but does not cover the t-criteria of Student.

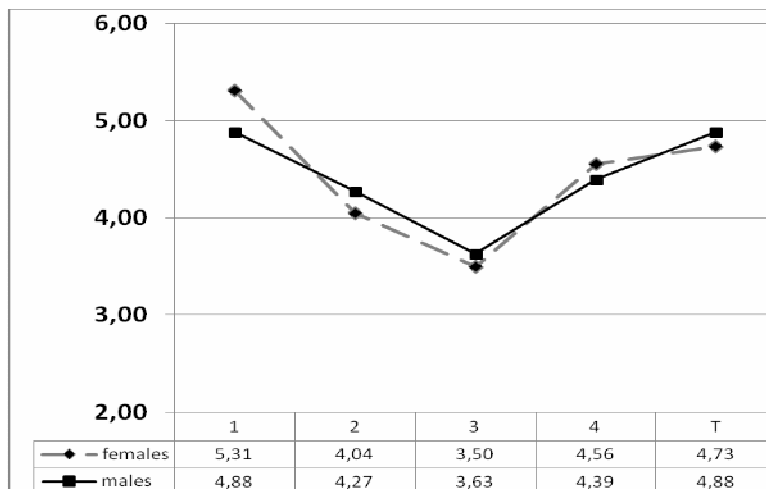


Fig.2. Distribution of results as per criteria skills – in various stages of the research women (N=16) and men (N=16)

From the statistical processing with use of t-criteria of Student the difference in the achievements upon execution of test No 15 (coordination swimming style breaststroke) at men ($\bar{X}=4,41$; $STD=1,62$; $N=16$) and women ($\bar{X}=3,53$; $STD=1,19$; $N=16$) is statistically significant ($P<0.05$).

At figure No 2 evident is that women master the swimming elements better in the first and fourth stage and men have better results in the second and third stage as well as better results at the theoretical test. Results of the final testing with regards to basic swimming skills have undergone statistical processing in order to assess the distraction, to take into consideration the effect of individually operating on the units factors. For characterization of the distraction we use the standard deviation (STD).

Achievements for men for stages 1, 2, 3, 4 and the theoretical test are respectively for an average grade of \bar{X} – 4,88; 4,27; 3,63 4,39; and 4,88; for the distraction STD – 1,10; 1,22; 1,13 ;1,42; 1,11.

Achievements for women for stages 1, 2, 3, 4 and theoretical test are respectively – average grade of \bar{X} - 5,31; 4,04; 3,50; 4,56; 4,73; , for the distraction STD – 0,98; 0,85; 0,93; 0,98; 1,22.

As evident of the distraction values for achievements of men and women, with men observed is a greater dispersion (greater fluctuation when mastering certain elements of swimming techniques) compared to women.

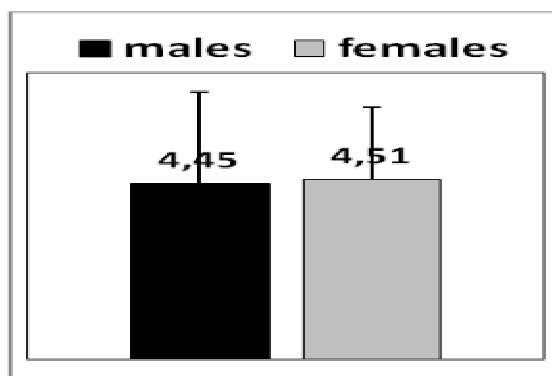


Fig.3. Final assessment. Men ($\bar{X}=4,45$; $STD=1,28$; $N=16$), women ($\bar{X}=4,51$; $STD=1,00$; $N=16$).

At figure No 3 presented are the results of the final grade obtained from the indicated results at the current assessment and the test results for theoretical knowledge of women and men. Evident is that women have better overall grade (Very good 4,51) then men who have a grade of (Good 4,45).

After comparing the average values not measured is a significant difference (t-criteria of Student, $P>0,05$) between the achievements of men and women at the final assessment of acquired swimming skills.

Dicussion

Established is the necessity of creating a model for assessment of the achievements of students with the necessary responsibility for identification of the level of preparation in academic discipline "Swimming".

Applied assessment model gives an opportunity for forming an objective assessment of acquired swimming skills for students of all majors.

Conclusions

Complex control of students in swimming training excludes mistakes by the teacher's assessment. Objective assessment prevents negative outcomes of the inter-personal relations in the swimming training of students from SWU "Neofit Rilski".

Conflicts of interest - there is no conflicts of interest to declare.

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