

**REVIEW
of dissertation work**

by Prof. KIRIL ATANASOV ALADJOV, Doctor of Science

ON THE TOPIC:

**"MODEL FOR INCREASING THE PHYSICAL FITNESS OF
STUDENTS WITH THE MEANS OF THE CIRCULAR TRAINING"
for awarding the educational and scientific degree "Doctor", in professional
field 1. 3. Pedagogy of training in... (Methodology of training in physical
education and sports - fitness disciplines)**

**of Assistant Professor Nikoleta Dimitrova Bocheva - PhD student in
independent form of education at the Department of Individual Sports and
Recreation, Department of Sports, Sofia University "St. Kliment Ohridski"
Scientific adviser: Assoc. Prof. Mihail Konchev, Ph.D.**

I. BRIEF AUTOBIOGRAPHIC DATA

Nikoleta Dimitrova Bocheva was born on March 16, 1985, in Sofia.

In 2004 She completed secondary special education in the specialty "Organizer of medium and small business" in 128 High School "Albert Einstein".

She started his career and worked as a circus artist - aerial acrobatics at the Kovachevi Troupe in the period 2000-2006.

From 2011 to 2013 She worked as an instructor in aerobics and Pilates. In the period 2012-2016 She worked as a sports teacher.

From 2016 to 2018 she was a Sports Teacher at the Private Language High School "Prof. Zlatarski".

She works as an assistant coach of preparatory groups from 2013 to 2021 at the Acro-Tamp Sports Club.

From 2021 to the present, she is chairman and coach of Acro Jim NB Sports Club.

The doctoral student Nikoleta Bocheva obtained the bachelor's degree in 2014 at the National Sports Academy - "Vasil Levski" in the specialty "Sports Aerobics Coach".

In 2017 She graduated from NSA "Vasil Levski" with the educational qualification degree "Master", specialty "Creation and implementation of sports shows". At the same time, she obtained a Certificate for completed additional training in "Innovative Approaches in Physical Education and Sports" at the Centre for Postgraduate Qualification of NSA "Vasil Levski".

From October 2018 until now She is an assistant professor at Sofia University "St. Kliment Ohridski".

II. ACTUALITY AND SIGNIFICANCE OF THE DEVELOPED PROBLEMS IN THE DISSERTATION

The problem of improving and optimizing the physical preparation of students, nowadays, will always be relevant. The topicality of the topic of the dissertation is well substantiated by the doctoral student in her goal: "To develop a model for improving physical fitness and study its effect in students of Sofia University St. Kliment Ohridski"

III. GENERAL CHARACTERISTICS OF THE DISSERTATION WORK, OF THE METHODS USED AND SCIENTIFIC ACHIEVEMENTS

The dissertation is developed in a total volume of 178 computer pages. Additionally, applications within 35 pages are included. The content is formed in 3 (three) interrelated chapters. The work is illustrated with 52 tables and 30 figures. The doctoral student used a total of 162 information sources, of which 39 in Cyrillic, 113 in Latin and 10 websites.

The adopted structure of the dissertation, consisting of an introduction and 3 (three) chapters, presented with conclusions and recommendations, is a logical consequence of the well-formulated goals, main tasks and methodology for their

development. The doctoral student focused on "Development of a model for improving physical fitness", and on the other hand to study the effect of its application in students of Sofia University "St. Kliment Ohridski".

In **Chapter One**, Assistant Professor Nikoleta Bocheva has made a thorough literary review, and within 52 pages she has tried to cover a sufficient number of authors, specialists and literary sources. A detailed description of fitness disciplines as part of sports and physical education in the higher education system has been made. The doctoral student analyzed the issues concerning physical fitness and physical qualities. A classification of fitness disciplines has been made.

At the end of this chapter the working hypothesis is presented, which is formulated as follows: St. Kliment Ohridski".

Chapter Two. In this section of the dissertation the doctoral student has set the goal, tasks, organization and methodology of the research. The main goal of the dissertation is stated briefly and clearly and sounds convincing. To achieve this goal, the doctoral student performed 6 (six) main tasks.

The subject of the research are the activities with circuit training for students.

The object of the study is "The effect of the application of the developed model on the physical fitness of students who participated in the pedagogical experiment during the study period."

The organization of the study goes through 3 (three) main stages - from July 2018 to March 2020.

The contingent of the study are 150 students from the Sofia University "St. Kliment Ohridski" from 1st to 4th year, aged 18 to 22, who have participated in profiled sports activities held at Sofia University "St. Kliment Ohridski". A representative sample of 44 women was formed based on the method of random selection.

Mathematical - statistical methods for analysis of the results obtained from sports - pedagogical research are appropriately used:

- Multidimensional frequency analysis.
- Variation analysis.
- Students T Test for dependent samples.
- Non-parametric Wilcoxon test for dependent samples.
- Kolmogorov-Smirnov and Shapiro-Wilk tests to verify the normality of data distribution.
- Chebyshev's inequality.
- Sigma method.

The obtained results are processed with a software package.

In **Chapter Three**, Assistant Professor Nikoleta Bocheva made a detailed analysis of the results of the pedagogical experiment. To determine the functional capacity of the subjects, a EUROFIT test battery was used at the beginning and end of the application of the training methodology. The following tests are included:

- Jump length from place.
- Push-ups for 30 seconds.
- Flamingo test for time.
- Depth of slope (vertical slope).
- Abdominal presses for 30 seconds.
- Fan test.

Additionally, some anthropometric indicators were used in the research process - height (cm), body mass (kg), body mass index, skin folds. As an indicator of physical activity, the Flamingo test was used - balancing on one leg support, designed to measure static balance.

To obtain a more objective assessment of the effect of the application of circuit training with students, for the academic year 2018 - 2019, the obtained

values of the Cohen coefficients are compared, s D and Rosenthal results are reflected in a table and placed in figure. It can be seen that the magnitude of the effect, at the end of the experiment, is in the range of "medium" and "large".

As a result of the applied experimental methodology, the most significant increase is reported in the studied indicators of physical fitness. The doctoral student points out that the increased strength endurance of the upper part of the body is a result of performing the exercises "burpee", push-ups, and "swing" with a push-up. The improvement of the explosive power of the legs is due to the complex impact of the exercises "burpee", swing with a push-up, jump to a half squat, as well as performing strikes with a jump ".

The implementation of sets of stretching exercises in the preparatory and concluding part have contributed to improving the flexibility of the body. There is a medium effect of the indicator "strength endurance", which is due to the application of "plank" exercises and those for the abdominal muscles, which have a positive training effect on the abdominal muscles.

The methodology of circuit training applied by the doctoral student also influenced the body mass index (BMI). After the end of the experiment, the BMI of the subjects decreased by 0.25 units, reaching 20.32, which remains within the limits of the assumed normal body weight 19-24.9 in non-trainers.

The proposed curriculum is qualitatively developed and distributed by semesters. The developed model, for increasing the physical fitness of the students with the means of the circuit training, contains the necessary for the purpose methodical instructions and the recommended dosage, in accordance with the used methods and means of influence.

The placed applications, at the end of the dissertation, regarding the application of the developed methodology in the preparatory and main part of the classes, are very well illustrated and give an excellent idea of the exercises used in their sequence.

At the end of the pedagogical experiment, Assistant Professor Nikoleta Bocheva conducted a survey, the results of which show that the consumption of proteins, carbohydrates and fats is in the "Framework of recommendations for non-trainers and those for healthy eating."

Against the background of the conducted pedagogical experiment and the applied methodology for circular training, as well as the final results of the research, at the end of the dissertation, 6 conclusions and 2 recommendations were made. The conclusions are well substantiated and have a general character. The pedagogical experiment proves the advantages of the applied methodology for influencing the physical qualities of the studied persons.

In the conclusions Nikoleta Bocheva points out that "The developed training model is applicable and adapted for the purposes of physical education at Sofia University" St. Kliment Ohridski". In addition, the Eurofit test battery used was "sufficiently informative with regard to the physical fitness indicators examined".

In my opinion, what is stated in these two conclusions can be considered that they emphasize the main contributing moments of the pedagogical experiment. The contribution moments are a logical consequence of the conducted research.

IV. CRITICAL NOTES AND RECOMMENDATIONS

The dissertation presented for review is well structured and illustrated. A pedagogical experiment was conducted qualitatively. I recommend the doctoral student to continue her research in this area and to apply in practice the methods and means of circuit training, as a unique form of impact on physical qualities.

I have no critical remarks, such as I had made in the preliminary review. The doctoral student has made the necessary adjustments. I would recommend the author to offer the developed training model for physical education, through

circular activities, as well as the test battery "Eurofit" to other higher education institutions.

V. PUBLICATIONS RELATED TO THE TOPIC OF THE DISSERTATION

The doctoral student Nikoleta Bocheva presented an appropriately designed abstract, at the end of which is a list of 3 (three) publications related to the topic of the dissertation. She is the sole author of all three publications. They were published in the period 2020 - 2021. The abstract is a synthesized copy of the dissertation submitted for review. It is shaped and structured according to the necessary requirements.

Getting acquainted with the materials of the competition, I did not find any data on plagiarism and illegal use of sources by other authors.

VI. CONCLUSION

I believe that the dissertation developed in this way has the necessary scientific and scientific-applied contributions and is proof that the doctoral student has the necessary knowledge and skills to implement and implement in the practice of research.

In conclusion, I propose to the esteemed scientific jury of Assistant Professor Nikoleta Dimitrova Bocheva to be awarded the educational and scientific degree "Doctor" in professional field 1. 3. Pedagogy of training in... (Methodology of training in physical education and sports - fitness disciplines).

Prepared by the review: Prof. Kiril Aladzhov, Doctor of Science

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